

# SEQUENCE LISTING

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 Thomas Clouaire

<120> THAP PROTEINS AS NUCLEAR RECEPTORS FOR  
 CHEMOKINES AND ROLES IN TRANSCRIPTIONAL REGULATION, CELL  
 PROLIFERATION AND CELL DIFFERENTIATION

<130> BIOBANK.012A

<140> Unknown

<141> 2003-12-10

<150> 60/432699

<151> 2002-12-10

<150> 60/485027

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<160> 535

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 74

<212> PRT

<213> Artificial Sequence

<220>

<223> THAP domain consensus

<221> UNSURE

<222> 2-5, 7-21, 23-31, 33-49, 51-52, 55-73

<223> Xaa = any of the twenty amino acids

<400> 1

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1				5				10					15		
Xaa	Xaa	Xaa	Xaa	Xaa	Pro	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Trp
			20					25					30		
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
			35					40					45		
Xaa	Cys	Xaa	Xaa	His	Phe	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
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Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Pro						
65						70									

<210> 2

<211> 81  
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<220>  
 <223> THAP domain consensus

<221> UNSURE  
 <222> 3-4, 6-9, 11-21, 24, 27-35, 37-41, 43-53, 56, 59-62, 64-71, 74-75, 80  
 <223> Xaa = any of the twenty amino acids

<400> 2  
 Met Pro Xaa Xaa Cys Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa  
 1 5 10 15  
 Xaa Xaa Xaa Xaa Xaa Phe His Xaa Phe Pro Xaa Xaa Xaa Xaa Xaa Xaa  
 20 25 30  
 Xaa Xaa Xaa Trp Xaa Xaa Xaa Xaa Xaa Arg Xaa Xaa Xaa Xaa Xaa Xaa  
 35 40 45  
 Xaa Xaa Xaa Xaa Xaa Cys Ser Xaa His Phe Xaa Xaa Xaa Xaa Phe Xaa  
 50 55 60  
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Leu Lys Xaa Xaa Ala Val Pro Thr Xaa  
 65 70 75 80  
 Phe

<210> 3  
 <211> 213  
 <212> PRT  
 <213> Homo sapiens

<400> 3  
 Met Val Gln Ser Cys Ser Ala Tyr Gly Cys Lys Asn Arg Tyr Asp Lys  
 1 5 10 15  
 Asp Lys Pro Val Ser Phe His Lys Phe Pro Leu Thr Arg Pro Ser Leu  
 20 25 30  
 Cys Lys Glu Trp Glu Ala Ala Val Arg Arg Lys Asn Phe Lys Pro Thr  
 35 40 45  
 Lys Tyr Ser Ser Ile Cys Ser Glu His Phe Thr Pro Asp Cys Phe Lys  
 50 55 60  
 Arg Glu Cys Asn Asn Lys Leu Leu Lys Glu Asn Ala Val Pro Thr Ile  
 65 70 75 80  
 Phe Leu Cys Thr Glu Pro His Asp Lys Lys Glu Asp Leu Leu Glu Pro  
 85 90 95  
 Gln Glu Gln Leu Pro Pro Pro Pro Leu Pro Pro Pro Val Ser Gln Val  
 100 105 110  
 Asp Ala Ala Ile Gly Leu Leu Met Pro Pro Leu Gln Thr Pro Val Asn  
 115 120 125  
 Leu Ser Val Phe Cys Asp His Asn Tyr Thr Val Glu Asp Thr Met His  
 130 135 140  
 Gln Arg Lys Arg Ile His Gln Leu Glu Gln Gln Val Glu Lys Leu Arg  
 145 150 155 160  
 Lys Lys Leu Lys Thr Ala Gln Gln Arg Cys Arg Arg Gln Glu Arg Gln  
 165 170 175  
 Leu Glu Lys Leu Lys Glu Val Val His Phe Gln Lys Glu Lys Asp Asp  
 180 185 190

Val Ser Glu Arg Gly Tyr Val Ile Leu Pro Asn Asp Tyr Phe Glu Ile  
 195 200 205  
 Val Glu Val Pro Ala  
 210

<210> 4  
 <211> 228  
 <212> PRT  
 <213> Homo sapiens

<400> 4  
 Met Pro Thr Asn Cys Ala Ala Ala Gly Cys Ala Thr Thr Tyr Asn Lys  
 1 5 10 15  
 His Ile Asn Ile Ser Phe His Arg Phe Pro Leu Asp Pro Lys Arg Arg  
 20 25 30  
 Lys Glu Trp Val Arg Leu Val Arg Arg Lys Asn Phe Val Pro Gly Lys  
 35 40 45  
 His Thr Phe Leu Cys Ser Lys His Phe Glu Ala Ser Cys Phe Asp Leu  
 50 55 60  
 Thr Gly Gln Thr Arg Arg Leu Lys Met Asp Ala Val Pro Thr Ile Phe  
 65 70 75 80  
 Asp Phe Cys Thr His Ile Lys Ser Met Lys Leu Lys Ser Arg Asn Leu  
 85 90 95  
 Leu Lys Lys Asn Asn Ser Cys Ser Pro Ala Gly Pro Ser Asn Leu Lys  
 100 105 110  
 Ser Asn Ile Ser Ser Gln Gln Val Leu Leu Glu His Ser Tyr Ala Phe  
 115 120 125  
 Arg Asn Pro Met Glu Ala Lys Lys Arg Ile Ile Lys Leu Glu Lys Glu  
 130 135 140  
 Ile Ala Ser Leu Arg Arg Lys Met Lys Thr Cys Leu Gln Lys Glu Arg  
 145 150 155 160  
 Arg Ala Thr Arg Arg Trp Ile Lys Ala Thr Cys Leu Val Lys Asn Leu  
 165 170 175  
 Glu Ala Asn Ser Val Leu Pro Lys Gly Thr Ser Glu His Met Leu Pro  
 180 185 190  
 Thr Ala Leu Ser Ser Leu Pro Leu Glu Asp Phe Lys Ile Leu Glu Gln  
 195 200 205  
 Asp Gln Gln Asp Lys Thr Leu Leu Ser Leu Asn Leu Lys Gln Thr Lys  
 210 215 220  
 Ser Thr Phe Ile  
 225

<210> 5  
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 <212> PRT  
 <213> Homo sapiens

<400> 5  
 Met Pro Lys Ser Cys Ala Ala Arg Gln Cys Cys Asn Arg Tyr Ser Ser  
 1 5 10 15  
 Arg Arg Lys Gln Leu Thr Phe His Arg Phe Pro Phe Ser Arg Pro Glu  
 20 25 30  
 Leu Leu Lys Glu Trp Val Leu Asn Ile Gly Arg Gly Asn Phe Lys Pro  
 35 40 45  
 Lys Gln His Thr Val Ile Cys Ser Glu His Phe Arg Pro Glu Cys Phe

50		55		60
Ser Ala Phe Gly Asn Arg Lys Asn Leu Lys His Asn Ala Val Pro Thr				
65		70		75
Val Phe Ala Phe Gln Asp Pro Thr Gln Gln Val Arg Glu Asn Thr Asp				80
	85		90	95
Pro Ala Ser Glu Arg Gly Asn Ala Ser Ser Ser Gln Lys Glu Lys Val				
	100		105	110
Leu Pro Glu Ala Gly Ala Gly Glu Asp Ser Pro Gly Arg Asn Met Asp				
	115		120	125
Thr Ala Leu Glu Glu Leu Gln Leu Pro Pro Asn Ala Glu Gly His Val				
	130		135	140
Lys Gln Val Ser Pro Arg Arg Pro Gln Ala Thr Glu Ala Val Gly Arg				
145		150		155
Pro Thr Gly Pro Ala Gly Leu Arg Arg Thr Pro Asn Lys Gln Pro Ser				160
	165		170	175
Asp His Ser Tyr Ala Leu Leu Asp Leu Asp Ser Leu Lys Lys Lys Leu				
	180		185	190
Phe Leu Thr Leu Lys Glu Asn Glu Lys Leu Arg Lys Arg Leu Gln Ala				
	195		200	205
Gln Arg Leu Val Met Arg Arg Met Ser Ser Arg Leu Arg Ala Cys Lys				
	210		215	220
Gly His Gln Gly Leu Gln Ala Arg Leu Gly Pro Glu Gln Gln Ser				
225		230		235

<210> 6

<211> 577

<212> PRT

<213> Homo sapiens

<400> 6

Met Val Ile Cys Cys Ala Ala Val Asn Cys Ser Asn Arg Gln Gly Lys		
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Gly Glu Lys Arg Ala Val Ser Phe His Arg Phe Pro Leu Lys Asp Ser		15
	20	25
Lys Arg Leu Ile Gln Trp Leu Lys Ala Val Gln Arg Asp Asn Trp Thr		30
	35	40
Pro Thr Lys Tyr Ser Phe Leu Cys Ser Glu His Phe Thr Lys Asp Ser		45
	50	55
Phe Ser Lys Arg Leu Glu Asp Gln His Arg Leu Leu Lys Pro Thr Ala		60
65		70
Val Pro Ser Ile Phe His Leu Thr Glu Lys Lys Arg Gly Ala Gly Gly		75
	85	90
His Gly Arg Thr Arg Arg Lys Asp Ala Ser Lys Ala Thr Gly Gly Val		95
	100	105
Arg Gly His Ser Ser Ala Ala Thr Gly Arg Gly Ala Ala Gly Trp Ser		110
	115	120
Pro Ser Ser Ser Gly Asn Pro Met Ala Lys Pro Glu Ser Arg Arg Leu		125
	130	135
Lys Gln Ala Ala Leu Gln Gly Glu Ala Thr Pro Arg Ala Ala Gln Glu		140
145		150
Ala Ala Ser Gln Glu Gln Ala Gln Gln Ala Leu Glu Arg Thr Pro Gly		155
	165	170
Asp Gly Leu Ala Thr Met Val Ala Gly Ser Gln Gly Lys Ala Glu Ala		175
	180	185
Ser Ala Thr Asp Ala Gly Asp Glu Ser Ala Thr Ser Ser Ile Glu Gly		190
	195	200
		205



Gly	Val	Thr	Asp	Lys	Ser	Gly	Ile	Ser	Met	Asp	Asp	Phe	Thr	Pro	Pro
210						215				220					
Gly	Ser	Gly	Ala	Cys	Lys	Phe	Ile	Gly	Ser	Leu	His	Ser	Tyr	Ser	Phe
225					230					235					240
Ser	Ser	Lys	His	Thr	Arg	Glu	Arg	Pro	Ser	Val	Pro	Arg	Glu	Pro	Ile
				245					250					255	
Asp	Arg	Lys	Arg	Leu	Lys	Lys	Asp	Val	Glu	Pro	Ser	Cys	Ser	Gly	Ser
		260						265					270		
Ser	Leu	Gly	Pro	Asp	Lys	Gly	Leu	Ala	Gln	Ser	Pro	Pro	Ser	Ser	Ser
	275						280					285			
Leu	Thr	Ala	Thr	Pro	Gln	Lys	Pro	Ser	Gln	Ser	Pro	Ser	Ala	Pro	Pro
290					295						300				
Ala	Asp	Val	Thr	Pro	Lys	Pro	Ala	Thr	Glu	Ala	Val	Gln	Ser	Glu	His
305					310					315					320
Ser	Asp	Ala	Ser	Pro	Met	Ser	Ile	Asn	Glu	Val	Ile	Leu	Ser	Ala	Ser
				325					330					335	
Gly	Ala	Cys	Lys	Leu	Ile	Asp	Ser	Leu	His	Ser	Tyr	Cys	Phe	Ser	Ser
		340						345				350			
Arg	Gln	Asn	Lys	Ser	Gln	Val	Cys	Cys	Leu	Arg	Glu	Gln	Val	Glu	Lys
	355					360						365			
Lys	Asn	Gly	Glu	Leu	Lys	Ser	Leu	Arg	Gln	Arg	Val	Ser	Arg	Ser	Asp
370					375						380				
Ser	Gln	Val	Arg	Lys	Leu	Gln	Glu	Lys	Leu	Asp	Glu	Leu	Arg	Arg	Val
385				390					395						400
Ser	Val	Pro	Tyr	Pro	Ser	Ser	Leu	Leu	Ser	Pro	Ser	Arg	Glu	Pro	Pro
				405					410					415	
Lys	Met	Asn	Pro	Val	Val	Glu	Pro	Leu	Ser	Trp	Met	Leu	Gly	Thr	Trp
		420						425					430		
Leu	Ser	Asp	Pro	Pro	Gly	Ala	Gly	Thr	Tyr	Pro	Thr	Leu	Gln	Pro	Phe
	435					440						445			
Gln	Tyr	Leu	Glu	Glu	Val	His	Ile	Ser	His	Val	Gly	Gln	Pro	Met	Leu
450					455						460				
Asn	Phe	Ser	Phe	Asn	Ser	Phe	His	Pro	Asp	Thr	Arg	Lys	Pro	Met	His
465				470					475					480	
Arg	Glu	Cys	Gly	Phe	Ile	Arg	Leu	Lys	Pro	Asp	Thr	Asn	Lys	Val	Ala
			485						490					495	
Phe	Val	Ser	Ala	Gln	Asn	Thr	Gly	Val	Val	Glu	Val	Glu	Glu	Gly	Glu
		500						505				510			
Val	Asn	Gly	Gln	Glu	Leu	Cys	Ile	Ala	Ser	His	Ser	Ile	Ala	Arg	Ile
	515						520					525			
Ser	Phe	Ala	Lys	Glu	Pro	His	Val	Glu	Gln	Ile	Thr	Arg	Lys	Phe	Arg
	530					535					540				
Leu	Asn	Ser	Glu	Gly	Lys	Leu	Glu	Gln	Thr	Val	Ser	Met	Ala	Thr	Thr
545					550				555						560
Thr	Gln	Pro	Met	Thr	Gln	His	Leu	His	Val	Thr	Tyr	Lys	Lys	Val	Thr
				565					570					575	

Pro

<210> 7

<211> 395

<212> PRT

<213> Homo sapiens

<400> 7

Met Pro Arg Tyr Cys Ala Ala Ile Cys Cys Lys Asn Arg Arg Gly Arg

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Asn	Asn	Lys	Asp	Arg	Lys	Leu	Ser	Phe	Tyr	Pro	Phe	Pro	Leu	His
			20					25					30	Asp
Lys	Glu	Arg	Leu	Glu	Lys	Trp	Leu	Lys	Asn	Met	Lys	Arg	Asp	Ser
		35					40					45		Trp
Val	Pro	Ser	Lys	Tyr	Gln	Phe	Leu	Cys	Ser	Asp	His	Phe	Thr	Pro
	50					55					60			Asp
Ser	Leu	Asp	Ile	Arg	Trp	Gly	Ile	Arg	Tyr	Leu	Lys	Gln	Thr	Ala
65				70					75					80
Pro	Thr	Ile	Phe	Ser	Leu	Pro	Glu	Asp	Asn	Gln	Gly	Lys	Asp	Pro
			85					90					95	Ser
Lys	Lys	Lys	Ser	Gln	Lys	Lys	Asn	Leu	Glu	Asp	Glu	Lys	Glu	Val
			100				105					110		Cys
Pro	Lys	Ala	Lys	Ser	Glu	Glu	Ser	Phe	Val	Leu	Asn	Glu	Thr	Lys
		115					120					125		Lys
Asn	Ile	Val	Asn	Thr	Asp	Val	Pro	His	Gln	His	Pro	Glu	Leu	Leu
	130					135					140			His
Ser	Ser	Ser	Leu	Val	Lys	Pro	Pro	Ala	Pro	Lys	Thr	Gly	Ser	Ile
145				150					155					Gln
Asn	Asn	Met	Leu	Thr	Leu	Asn	Leu	Val	Lys	Gln	His	Thr	Gly	Lys
			165					170					175	Pro
Glu	Ser	Thr	Leu	Glu	Thr	Ser	Val	Asn	Gln	Asp	Thr	Gly	Arg	Gly
		180					185					190		Gly
Phe	His	Thr	Cys	Phe	Glu	Asn	Leu	Asn	Ser	Thr	Thr	Ile	Thr	Leu
		195				200					205			Thr
Thr	Ser	Asn	Ser	Glu	Ser	Ile	His	Gln	Ser	Leu	Glu	Thr	Gln	Glu
	210				215					220				Val
Leu	Glu	Val	Thr	Thr	Ser	His	Leu	Ala	Asn	Pro	Asn	Phe	Thr	Ser
225				230					235					Asn
Ser	Met	Glu	Ile	Lys	Ser	Ala	Gln	Glu	Asn	Pro	Phe	Leu	Phe	Ser
			245				250					255		Thr
Ile	Asn	Gln	Thr	Val	Glu	Glu	Leu	Asn	Thr	Asn	Lys	Glu	Ser	Val
		260				265						270		Ile
Ala	Ile	Phe	Val	Pro	Ala	Glu	Asn	Ser	Lys	Pro	Ser	Val	Asn	Ser
	275				280						285			Phe
Ile	Ser	Ala	Gln	Lys	Glu	Thr	Glu	Met	Glu	Asp	Thr	Asp	Ile	Glu
	290			295					300					
Asp	Ser	Leu	Tyr	Lys	Asp	Val	Asp	Tyr	Gly	Thr	Glu	Val	Leu	Gln
305				310				315						Ile
Glu	His	Ser	Tyr	Cys	Arg	Gln	Asp	Ile	Asn	Lys	Glu	His	Leu	Trp
			325				330						335	Gln
Lys	Val	Ser	Lys	Leu	His	Ser	Lys	Ile	Thr	Leu	Leu	Glu	Leu	Lys
		340					345					350		Glu
Gln	Gln	Thr	Leu	Gly	Arg	Leu	Lys	Ser	Leu	Glu	Ala	Leu	Ile	Arg
	355					360					365			Gln
Leu	Lys	Gln	Glu	Asn	Trp	Leu	Ser	Glu	Glu	Asn	Val	Lys	Ile	Ile
	370				375					380				Glu
Asn	His	Phe	Thr	Thr	Tyr	Glu	Val	Thr	Met	Ile				
385				390						395				

<210> 8  
 <211> 222  
 <212> PRT  
 <213> Homo sapiens

<400> 8



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			180					185					190				
Ala	Gln	Pro	Ser	Pro	Glu	Arg	Gln	Pro	Ser	Pro	Leu	Glu	Pro	Arg	Pro		
		195					200					205					
Val	Ser	Pro	Ser	Ala	Tyr	Met	Leu	Arg	Leu	Pro	Pro	Pro	Ala	Gly	Ala		
	210					215					220						
Tyr	Ile	Gln	Asn	Glu	His	Ser	Tyr	Gln	Val	Gly	Ser	Ala	Leu	Leu	Trp		
225					230					235					240		
Lys	Arg	Arg	Ala	Glu	Ala	Ala	Leu	Asp	Ala	Leu	Asp	Lys	Ala	Gln	Arg		
			245					250						255			
Gln	Leu	Gln	Ala	Cys	Lys	Arg	Arg	Glu	Gln	Arg	Leu	Arg	Leu	Arg	Leu		
		260					265						270				
Thr	Lys	Leu	Gln	Gln	Glu	Arg	Ala	Arg	Glu	Lys	Arg	Ala	Gln	Ala	Asp		
	275					280						285					
Ala	Arg	Gln	Thr	Leu	Lys	Glu	His	Val	Gln	Asp	Phe	Ala	Met	Gln	Leu		
	290					295					300						
Ser	Ser	Ser	Met	Ala													
305																	

<210> 10  
 <211> 274  
 <212> PRT  
 <213> Homo sapiens

<400> 10																	
Met	Pro	Lys	Tyr	Cys	Arg	Ala	Pro	Asn	Cys	Ser	Asn	Thr	Ala	Gly	Arg		
1				5					10					15			
Leu	Gly	Ala	Asp	Asn	Arg	Pro	Val	Ser	Phe	Tyr	Lys	Phe	Pro	Leu	Lys		
		20					25					30					
Asp	Gly	Pro	Arg	Leu	Gln	Ala	Trp	Leu	Gln	His	Met	Gly	Cys	Glu	His		
		35				40					45						
Trp	Val	Pro	Ser	Cys	His	Gln	His	Leu	Cys	Ser	Glu	His	Phe	Thr	Pro		
	50				55					60							
Ser	Cys	Phe	Gln	Trp	Arg	Trp	Gly	Val	Arg	Tyr	Leu	Arg	Pro	Asp	Ala		
65				70				75					80				
Val	Pro	Ser	Ile	Phe	Ser	Arg	Gly	Pro	Pro	Ala	Lys	Ser	Gln	Arg	Arg		
		85						90				95					
Thr	Arg	Ser	Thr	Gln	Lys	Pro	Val	Ser	Pro	Pro	Pro	Pro	Leu	Gln	Lys		
	100					105						110					
Asn	Thr	Pro	Leu	Pro	Gln	Ser	Pro	Ala	Ile	Pro	Val	Ser	Gly	Pro	Val		
	115				120						125						
Arg	Leu	Val	Val	Leu	Gly	Pro	Thr	Ser	Gly	Ser	Pro	Lys	Thr	Val	Ala		
	130				135					140							
Thr	Met	Leu	Leu	Thr	Pro	Leu	Ala	Pro	Ala	Pro	Thr	Pro	Glu	Arg	Ser		
145				150					155					160			
Gln	Pro	Glu	Val	Pro	Ala	Gln	Gln	Ala	Gln	Thr	Gly	Leu	Gly	Pro	Val		
		165				170							175				
Leu	Gly	Ala	Leu	Gln	Arg	Arg	Val	Arg	Arg	Leu	Gln	Arg	Cys	Gln	Glu		
		180				185					190						
Arg	His	Gln	Ala	Gln	Leu	Gln	Ala	Leu	Glu	Arg	Leu	Ala	Gln	Gln	Leu		
	195				200						205						
His	Gly	Glu	Ser	Leu	Leu	Ala	Arg	Ala	Arg	Arg	Gly	Leu	Gln	Arg	Leu		
	210				215						220						
Thr	Thr	Ala	Gln	Thr	Leu	Gly	Pro	Glu	Glu	Ser	Gln	Thr	Phe	Thr	Ile		
225				230						235					240		

Ile Cys Gly Gly Pro Asp Ile Ala Met Val Leu Ala Gln Asp Pro Ala  
245 250 255  
Pro Ala Thr Val Asp Ala Lys Pro Glu Leu Leu Asp Thr Arg Ile Pro  
260 265 270  
Ser Ala

<210> 11  
<211> 903  
<212> PRT  
<213> Homo sapiens

<400> 11  
Met Thr Arg Ser Cys Ser Ala Val Gly Cys Ser Thr Arg Asp Thr Val  
1 5 10 15  
Leu Ser Arg Glu Arg Gly Leu Ser Phe His Gln Phe Pro Thr Asp Thr  
20 25 30  
Ile Gln Arg Ser Lys Trp Ile Arg Ala Val Asn Arg Val Asp Pro Arg  
35 40 45  
Ser Lys Lys Ile Trp Ile Pro Gly Pro Gly Ala Ile Leu Cys Ser Lys  
50 55 60  
His Phe Gln Glu Ser Asp Phe Glu Ser Tyr Gly Ile Arg Arg Lys Leu  
65 70 75 80  
Lys Lys Gly Ala Val Pro Ser Val Ser Leu Tyr Lys Ile Pro Gln Gly  
85 90 95  
Val His Leu Lys Gly Lys Ala Arg Gln Lys Ile Leu Lys Gln Pro Leu  
100 105 110  
Pro Asp Asn Ser Gln Glu Val Ala Thr Glu Asp His Asn Tyr Ser Leu  
115 120 125  
Lys Thr Pro Leu Thr Ile Gly Ala Glu Lys Leu Ala Glu Val Gln Gln  
130 135 140  
Met Leu Gln Val Ser Lys Lys Arg Leu Ile Ser Val Lys Asn Tyr Arg  
145 150 155 160  
Met Ile Lys Lys Arg Lys Gly Leu Arg Leu Ile Asp Ala Leu Val Glu  
165 170 175  
Glu Lys Leu Leu Ser Glu Glu Thr Glu Cys Leu Leu Arg Ala Gln Phe  
180 185 190  
Ser Asp Phe Lys Trp Glu Leu Tyr Asn Trp Arg Glu Thr Asp Glu Tyr  
195 200 205  
Ser Ala Glu Met Lys Gln Phe Ala Cys Thr Leu Tyr Leu Cys Ser Ser  
210 215 220  
Lys Val Tyr Asp Tyr Val Arg Lys Ile Leu Lys Leu Pro His Ser Ser  
225 230 235 240  
Ile Leu Arg Thr Trp Leu Ser Lys Cys Gln Pro Ser Pro Gly Phe Asn  
245 250 255  
Ser Asn Ile Phe Ser Phe Leu Gln Arg Arg Val Glu Asn Gly Asp Gln  
260 265 270  
Leu Tyr Gln Tyr Cys Ser Leu Leu Ile Lys Ser Ile Pro Leu Lys Gln  
275 280 285  
Gln Leu Gln Trp Asp Pro Ser Ser His Ser Leu Gln Gly Phe Met Asp  
290 295 300  
Phe Gly Leu Gly Lys Leu Asp Ala Asp Glu Thr Pro Leu Ala Ser Glu  
305 310 315 320  
Thr Val Leu Leu Met Ala Val Gly Ile Phe Gly His Trp Arg Thr Pro  
325 330 335  
Leu Gly Tyr Phe Phe Val Asn Arg Ala Ser Gly Tyr Leu Gln Ala Gln



Gln Lys Ile Leu Cys Glu Leu Ser Gly His Ile Asp Leu Phe Val Asp  
                             805                            810                            815  
 Val Asn Lys His Leu Phe Asp Gly Glu Val Cys Ala Ile Asn His Phe  
                             820                            825                            830  
 Val Lys Leu Leu Lys Asp Ile Ile Ile Cys Phe Leu Asn Ile Arg Ala  
                             835                            840                            845  
 Lys Asn Val Ala Gln Asn Pro Leu Lys His His Ser Glu Arg Thr Asp  
                             850                            855                            860  
 Met Lys Thr Leu Ser Arg Lys His Trp Ser Pro Val Gln Asp Tyr Lys  
 865                            870                            875                            880  
 Cys Ser Ser Phe Ala Asn Thr Ser Ser Lys Phe Arg His Leu Leu Ser  
                             885                            890                            895  
 Asn Asp Gly Tyr Pro Phe Lys  
                             900

<210> 12  
 <211> 257  
 <212> PRT  
 <213> Homo sapiens

<400> 12  
 Met Pro Ala Arg Cys Val Ala Ala His Cys Gly Asn Thr Thr Lys Ser  
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 Gly Lys Ser Leu Phe Arg Phe Pro Lys Asp Arg Ala Val Arg Leu Leu  
                             20                            25                            30  
 Trp Asp Arg Phe Val Arg Gly Cys Arg Ala Asp Trp Tyr Gly Gly Asn  
                             35                            40                            45  
 Asp Arg Ser Val Ile Cys Ser Asp His Phe Ala Pro Ala Cys Phe Asp  
                             50                            55                            60  
 Val Ser Ser Val Ile Gln Lys Asn Leu Arg Phe Ser Gln Arg Leu Arg  
 65                            70                            75                            80  
 Leu Val Ala Gly Ala Val Pro Thr Leu His Arg Val Pro Ala Pro Ala  
                             85                            90                            95  
 Pro Lys Arg Gly Glu Glu Gly Asp Gln Ala Gly Arg Leu Asp Thr Arg  
                             100                            105                            110  
 Gly Glu Leu Gln Ala Ala Arg His Ser Glu Ala Ala Pro Gly Pro Val  
                             115                            120                            125  
 Ser Cys Thr Arg Pro Arg Ala Gly Lys Gln Ala Ala Ser Gln Ile  
                             130                            135                            140  
 Thr Cys Glu Asn Glu Leu Val Gln Thr Gln Pro His Ala Asp Asn Pro  
 145                            150                            155                            160  
 Ser Asn Thr Val Thr Ser Val Pro Thr His Cys Glu Glu Gly Pro Val  
                             165                            170                            175  
 His Lys Ser Thr Gln Ile Ser Leu Lys Arg Pro Arg His Arg Ser Val  
                             180                            185                            190  
 Gly Ile Gln Ala Lys Val Lys Ala Phe Gly Lys Arg Leu Cys Asn Ala  
                             195                            200                            205  
 Thr Thr Gln Thr Glu Glu Leu Trp Ser Arg Thr Ser Ser Leu Phe Asp  
                             210                            215                            220  
 Ile Tyr Ser Ser Asp Ser Glu Thr Asp Thr Asp Trp Asp Ile Lys Ser  
 225                            230                            235                            240  
 Glu Gln Ser Asp Leu Ser Tyr Met Ala Val Gln Val Lys Glu Glu Thr  
                             245                            250                            255  
 Cys

<210> 13  
 <211> 314  
 <212> PRT  
 <213> Homo sapiens

<400> 13  
 Met Pro Gly Phe Thr Cys Cys Val Pro Gly Cys Tyr Asn Asn Ser His  
 1 5 10 15  
 Arg Asp Lys Ala Leu His Phe Tyr Thr Phe Pro Lys Asp Ala Glu Leu  
 20 25 30  
 Arg Arg Leu Trp Leu Lys Asn Val Ser Arg Ala Gly Val Ser Gly Cys  
 35 40 45  
 Phe Ser Thr Phe Gln Pro Thr Thr Gly His Arg Leu Cys Ser Val His  
 50 55 60  
 Phe Gln Gly Gly Arg Lys Thr Tyr Thr Val Arg Val Pro Thr Ile Phe  
 65 70 75 80  
 Pro Leu Arg Gly Val Asn Glu Arg Lys Val Ala Arg Arg Pro Ala Gly  
 85 90 95  
 Ala Ala Ala Ala Arg Arg Arg Gln Gln Gln Gln Gln Gln Gln Gln  
 100 105 110  
 Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln  
 115 120 125  
 Gln Gln Gln Gln Ser Ser Pro Ser Ala Ser Thr Ala Gln Thr Ala Gln  
 130 135 140  
 Leu Gln Pro Asn Leu Val Ser Ala Ser Ala Ala Val Leu Leu Thr Leu  
 145 150 155 160  
 Gln Ala Thr Val Asp Ser Ser Gln Ala Pro Gly Ser Val Gln Pro Ala  
 165 170 175  
 Pro Ile Thr Pro Thr Gly Glu Asp Val Lys Pro Ile Asp Leu Thr Val  
 180 185 190  
 Gln Val Glu Phe Ala Ala Ala Glu Gly Ala Ala Ala Ala Ala Ala Ala  
 195 200 205  
 Ser Glu Leu Gln Ala Ala Thr Ala Gly Leu Glu Ala Ala Glu Cys Pro  
 210 215 220  
 Met Gly Pro Gln Leu Val Val Val Gly Glu Glu Gly Phe Pro Asp Thr  
 225 230 235 240  
 Gly Ser Asp His Ser Tyr Ser Leu Ser Ser Gly Thr Thr Glu Glu Glu  
 245 250 255  
 Leu Leu Arg Lys Leu Asn Glu Gln Arg Asp Ile Leu Ala Leu Met Glu  
 260 265 270  
 Val Lys Met Lys Glu Met Lys Gly Ser Ile Arg His Leu Arg Leu Thr  
 275 280 285  
 Glu Ala Lys Leu Arg Glu Glu Leu Arg Glu Lys Asp Arg Leu Leu Ala  
 290 295 300  
 Met Ala Val Ile Arg Lys Lys His Gly Met  
 305 310

<210> 14  
 <211> 761  
 <212> PRT  
 <213> Homo sapiens

<400> 14  
 Met Pro Asn Phe Cys Ala Ala Pro Asn Cys Thr Arg Lys Ser Thr Gln  
 1 5 10 15



Ser	Asp	Leu	Ala	Phe	Phe	Arg	Phe	Pro	Arg	Asp	Pro	Ala	Arg	Cys	Gln
		20						25					30		
Lys	Trp	Val	Glu	Asn	Cys	Arg	Arg	Ala	Asp	Leu	Glu	Asp	Lys	Thr	Pro
		35					40					45			
Asp	Gln	Leu	Asn	Lys	His	Tyr	Arg	Leu	Cys	Ala	Lys	His	Phe	Glu	Thr
	50					55					60				
Ser	Met	Ile	Cys	Arg	Thr	Ser	Pro	Tyr	Arg	Thr	Val	Leu	Arg	Asp	Asn
65					70					75					80
Ala	Ile	Pro	Thr	Ile	Phe	Asp	Leu	Thr	Ser	His	Leu	Asn	Asn	Pro	His
				85					90					95	
Ser	Arg	His	Arg	Lys	Arg	Ile	Lys	Glu	Leu	Ser	Glu	Asp	Glu	Ile	Arg
			100					105					110		
Thr	Leu	Lys	Gln	Lys	Lys	Ile	Asp	Glu	Thr	Ser	Glu	Gln	Glu	Gln	Lys
		115					120					125			
His	Lys	Glu	Thr	Asn	Asn	Ser	Asn	Ala	Gln	Asn	Pro	Ser	Glu	Glu	Glu
	130					135					140				
Gly	Glu	Gly	Gln	Asp	Glu	Asp	Ile	Leu	Pro	Leu	Thr	Leu	Glu	Glu	Lys
145					150					155					160
Glu	Asn	Lys	Glu	Tyr	Leu	Lys	Ser	Leu	Phe	Glu	Ile	Leu	Ile	Leu	Met
				165					170					175	
Gly	Lys	Gln	Asn	Ile	Pro	Leu	Asp	Gly	His	Glu	Ala	Asp	Glu	Ile	Pro
		180						185					190		
Glu	Gly	Leu	Phe	Thr	Pro	Asp	Asn	Phe	Gln	Ala	Leu	Leu	Glu	Cys	Arg
	195						200						205		
Ile	Asn	Ser	Gly	Glu	Glu	Val	Leu	Arg	Lys	Arg	Phe	Glu	Thr	Thr	Ala
	210					215					220				
Val	Asn	Thr	Leu	Phe	Cys	Ser	Lys	Thr	Gln	Gln	Arg	Gln	Met	Leu	Glu
225					230					235					240
Ile	Cys	Glu	Ser	Cys	Ile	Arg	Glu	Glu	Thr	Leu	Arg	Glu	Val	Arg	Asp
				245					250					255	
Ser	His	Phe	Phe	Ser	Ile	Ile	Thr	Asp	Asp	Val	Val	Asp	Ile	Ala	Gly
		260						265					270		
Glu	Glu	His	Leu	Pro	Val	Leu	Val	Arg	Phe	Val	Asp	Glu	Ser	His	Asn
		275					280					285			
Leu	Arg	Glu	Glu	Phe	Ile	Gly	Phe	Leu	Pro	Tyr	Glu	Ala	Asp	Ala	Glu
	290					295					300				
Ile	Leu	Ala	Val	Lys	Phe	His	Thr	Met	Ile	Thr	Glu	Lys	Trp	Gly	Leu
305					310					315					320
Asn	Met	Glu	Tyr	Cys	Arg	Gly	Gln	Ala	Tyr	Ile	Val	Ser	Ser	Gly	Phe
				325					330					335	
Ser	Ser	Lys	Met	Lys	Val	Val	Ala	Ser	Arg	Leu	Leu	Glu	Lys	Tyr	Pro
		340						345					350		
Gln	Ala	Ile	Tyr	Thr	Leu	Cys	Ser	Ser	Cys	Ala	Leu	Asn	Met	Trp	Leu
		355					360					365			
Ala	Lys	Ser	Val	Pro	Val	Met	Gly	Val	Ser	Val	Ala	Leu	Gly	Thr	Ile
	370					375					380				
Glu	Glu	Val	Cys	Ser	Phe	Phe	His	Arg	Ser	Pro	Gln	Leu	Leu	Leu	Glu
385					390					395					400
Leu	Asp	Asn	Val	Ile	Ser	Val	Leu	Phe	Gln	Asn	Ser	Lys	Glu	Arg	Gly
				405					410					415	
Lys	Glu	Leu	Lys	Glu	Ile	Cys	His	Ser	Gln	Trp	Thr	Gly	Arg	His	Asp
			420						425				430		
Ala	Phe	Glu	Ile	Leu	Val	Glu	Leu	Leu	Gln	Ala	Leu	Val	Leu	Cys	Leu
		435					440					445			
Asp	Gly	Ile	Asn	Ser	Asp	Thr	Asn	Ile	Arg	Trp	Asn	Asn	Tyr	Ile	Ala
	450					455					460				
Gly	Arg	Ala	Phe	Val	Leu	Cys	Ser	Ala	Val	Ser	Asp	Phe	Asp	Phe	Ile

465		470		475		480
Val Thr Ile Val Val Leu Lys Asn Val Leu Ser Phe Thr Arg Ala Phe						
	485		490		495	
Gly Lys Asn Leu Gln Gly Gln Thr Ser Asp Val Phe Phe Ala Ala Gly						
	500		505		510	
Ser Leu Thr Ala Val Leu His Ser Leu Asn Glu Val Met Glu Asn Ile						
	515		520		525	
Glu Val Tyr His Glu Phe Trp Phe Glu Glu Ala Thr Asn Leu Ala Thr						
	530		535		540	
Lys Leu Asp Ile Gln Met Lys Leu Pro Gly Lys Phe Arg Arg Ala His						
545		550		555		560
Gln Gly Asn Leu Glu Ser Gln Leu Thr Ser Glu Ser Tyr Tyr Lys Glu						
	565		570		575	
Thr Leu Ser Val Pro Thr Val Glu His Ile Ile Gln Glu Leu Lys Asp						
	580		585		590	
Ile Phe Ser Glu Gln His Leu Lys Ala Leu Lys Cys Leu Ser Leu Val						
	595		600		605	
Pro Ser Val Met Gly Gln Leu Lys Phe Asn Thr Ser Glu Glu His His						
	610		615		620	
Ala Asp Met Tyr Arg Ser Asp Leu Pro Asn Pro Asp Thr Leu Ser Ala						
625		630		635		640
Glu Leu His Cys Trp Arg Ile Lys Trp Lys His Arg Gly Lys Asp Ile						
	645		650		655	
Glu Leu Pro Ser Thr Ile Tyr Glu Ala Leu His Leu Pro Asp Ile Lys						
	660		665		670	
Phe Phe Pro Asn Val Tyr Ala Leu Lys Val Leu Cys Ile Leu Pro						
	675		680		685	
Val Met Lys Val Glu Asn Glu Arg Tyr Glu Asn Gly Arg Lys Arg Leu						
	690		695		700	
Lys Ala Tyr Leu Arg Asn Thr Leu Thr Asp Gln Arg Ser Ser Asn Leu						
705		710		715		720
Ala Leu Leu Asn Ile Asn Phe Asp Ile Lys His Asp Leu Asp Leu Met						
	725		730		735	
Val Asp Thr Tyr Ile Lys Leu Tyr Thr Ser Lys Ser Glu Leu Pro Thr						
	740		745		750	
Asp Asn Ser Glu Thr Val Glu Asn Thr						
	755		760			

<210> 15

<211> 38

<212> PRT

<213> Artificial Sequence

<220>

<223> Consensus sequence for PAR4 binding domain of THAP

<221> UNSURE

<222> (1)...(38)

<223> Xaa = Any Amino Acid

<400> 15

Leu	Glu	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
1			5					10					15		
Gln	Arg	Xaa	Arg	Arg	Gln	Xaa	Arg	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
			20					25					30		
Xaa	Xaa	Xaa	Gln	Xaa	Glu										

<210> 16  
 <211> 73  
 <212> PRT  
 <213> Sus scrofa

<400> 16  
 Met Val Gln Ser Cys Ser Ala Tyr Gly Cys Lys Asn Arg Tyr Asp Lys  
 1 5 10 15  
 Asp Lys Pro Val Ser Phe His Lys Phe Pro Leu Thr Arg Pro Ser Leu  
 20 25 30  
 Cys Lys Lys Trp Glu Ala Ala Val Arg Arg Lys Asn Phe Lys Pro Thr  
 35 40 45  
 Lys Tyr Ser Ser Ile Cys Ser Glu His Phe Thr Pro Asp Cys Phe Lys  
 50 55 60  
 Arg Glu Cys Asn Asn Lys Leu Leu Lys  
 65 70

<210> 17  
 <211> 99  
 <212> PRT  
 <213> Sus scrofa

<400> 17  
 Met Val Lys Cys Cys Ser Ala Ile Gly Cys Ala Ser Arg Cys Leu Pro  
 1 5 10 15  
 Asn Ser Lys Leu Lys Gly Leu Thr Phe His Val Phe Pro Thr Asp Glu  
 20 25 30  
 Lys Val Lys Arg Lys Trp Val Leu Ala Met Lys Arg Leu Asp Val Asn  
 35 40 45  
 Ala Ala Gly Met Trp Glu Pro Lys Lys Gly Asp Val Leu Cys Ser Arg  
 50 55 60  
 His Phe Lys Lys Thr Asp Phe Asp Arg Thr Thr Pro Asn Ile Lys Leu  
 65 70 75 80  
 Lys Pro Gly Val Ile Pro Ser Ile Phe Asp Ser Pro Ser His Leu Thr  
 85 90 95  
 Gly Glu Glu

<210> 18  
 <211> 103  
 <212> PRT  
 <213> Sus scrofa

<400> 18  
 Met Pro Arg His Cys Ser Ala Ala Gly Cys Cys Thr Arg Asp Thr Arg  
 1 5 10 15  
 Glu Thr Arg Asn Arg Gly Ile Ser Phe His Arg Leu Pro Lys Lys Asp  
 20 25 30  
 Asn Pro Arg Arg Gly Leu Trp Leu Ala Asn Cys Gln Arg Leu Asp Pro  
 35 40 45  
 Ser Gly Gln Gly Leu Trp Asp Pro Ala Ser Glu Tyr Ile Tyr Phe Cys  
 50 55 60

Ser Lys His Phe Glu Glu Asn Cys Phe Glu Leu Val Gly Ile Ser Gly  
65 70 75 80  
Tyr His Arg Leu Lys Glu Gly Ala Val Pro Thr Ile Phe Glu Ser Phe  
85 90 95  
Ser Lys Leu Arg Arg Thr Ala  
100

<210> 19  
<211> 99  
<212> PRT  
<213> Sus scrofa

<400> 19  
Met Thr Arg Ser Cys Ser Ala Val Gly Cys Ser Thr Arg Asp Thr Val  
1 5 10 15  
Leu Ser Arg Glu Arg Gly Leu Ser Phe His Gln Phe Pro Thr Asp Thr  
20 25 30  
Ile Gln Arg Ser Gln Trp Ile Arg Ala Val Asn Arg Met Asp Pro Arg  
35 40 45  
Ser Lys Lys Ile Trp Ile Pro Gly Pro Gly Ala Met Leu Cys Ser Lys  
50 55 60  
His Phe Gln Glu Ser Asp Phe Glu Ser Tyr Gly Ile Arg Arg Lys Leu  
65 70 75 80  
Lys Lys Gly Ala Val Pro Ser Val Ser Leu Tyr Lys Val Leu Gln Gly  
85 90 95  
Ala His Leu

<210> 20  
<211> 92  
<212> PRT  
<213> Bos taurus

<400> 20  
Met Pro Lys Ser Cys Ala Ala Arg Gln Cys Cys Asn Arg Tyr Ser Asn  
1 5 10 15  
Arg Arg Lys Gln Leu Thr Phe His Arg Phe Pro Phe Ser Arg Pro Glu  
20 25 30  
Leu Leu Lys Glu Trp Val Leu Asn Ile Gly Arg Gly Asp Phe Glu Pro  
35 40 45  
Lys Gln His Thr Val Ile Cys Ser Glu His Phe Arg Pro Glu Cys Phe  
50 55 60  
Ser Ala Phe Gly Asn Arg Lys Asn Leu Lys His Asn Ala Val Pro Thr  
65 70 75 80  
Val Phe Ala Phe Gln Gly Pro Pro Gln Leu Val Arg  
85 90

<210> 21  
<211> 75  
<212> PRT  
<213> Bos taurus

<400> 21  
Arg Leu Pro Lys Lys Asp Asn Pro Arg Arg Gly Leu Trp Leu Ala Asn

1		5		10		15									
Cys	Gln	Arg	Leu	Asp	Pro	Ser	Gly	Gln	Gly	Leu	Trp	Asp	Pro	Ala	Ser
		20					25						30		
Glu	Tyr	Ile	Tyr	Phe	Cys	Ser	Lys	His	Phe	Glu	Glu	Asn	Cys	Phe	Glu
		35					40					45			
Leu	Val	Gly	Ile	Ser	Gly	Tyr	His	Arg	Leu	Lys	Glu	Gly	Ala	Val	Pro
	50					55					60				
Thr	Ile	Phe	Glu	Ser	Phe	Ser	Lys	Leu	Arg	Arg					
65					70				75						

<210> 22  
 <211> 91  
 <212> PRT  
 <213> Mus musculus

<400> 22
Met Val Gln Ser Cys Ser Ala Tyr Gly Cys Lys Asn Arg Tyr Asp Lys
1 5 10 15
Asp Lys Pro Val Ser Phe His Lys Phe Pro Leu Thr Arg Pro Ser Leu
20 25 30
Cys Lys Gln Trp Glu Ala Ala Val Lys Arg Lys Asn Phe Lys Pro Thr
35 40 45
Lys Tyr Ser Ser Ile Cys Ser Glu His Phe Thr Pro Asp Cys Phe Lys
50 55 60
Arg Glu Cys Asn Asn Lys Leu Leu Lys Glu Asn Ala Val Pro Thr Ile
65 70 75 80
Phe Leu Tyr Ile Glu Pro His Glu Lys Lys Glu
85 90

<210> 23  
 <211> 90  
 <212> PRT  
 <213> Mus musculus

<400> 23
Met Pro Thr Asn Cys Ala Ala Ala Gly Cys Ala Ala Thr Tyr Asn Lys
1 5 10 15
His Ile Asn Ile Ser Phe His Arg Phe Pro Leu Asp Pro Lys Arg Arg
20 25 30
Lys Glu Trp Val Arg Leu Val Arg Arg Lys Asn Phe Val Pro Gly Lys
35 40 45
His Thr Phe Leu Cys Ser Lys His Phe Glu Ala Ser Cys Phe Asp Leu
50 55 60
Thr Gly Gln Thr Arg Arg Leu Lys Met Asp Ala Val Pro Thr Ile Phe
65 70 75 80
Asp Phe Cys Thr His Ile Lys Ser Leu Lys
85 90

<210> 24  
 <211> 92  
 <212> PRT  
 <213> Mus musculus

<400> 24

Met	Pro	Lys	Ser	Cys	Ala	Ala	Arg	Gln	Cys	Cys	Asn	Arg	Tyr	Ser	Ser
1				5					10					15	
Arg	Arg	Lys	Gln	Leu	Thr	Phe	His	Arg	Phe	Pro	Phe	Ser	Arg	Pro	Glu
			20					25					30		
Leu	Leu	Arg	Glu	Trp	Val	Leu	Asn	Ile	Gly	Arg	Ala	Asp	Phe	Lys	Pro
		35					40					45			
Lys	Gln	His	Thr	Val	Ile	Cys	Ser	Glu	His	Phe	Arg	Pro	Glu	Cys	Phe
	50					55					60				
Ser	Ala	Phe	Gly	Asn	Arg	Lys	Asn	Leu	Lys	His	Asn	Ala	Val	Pro	Thr
65				70						75					80
Val	Phe	Ala	Phe	Gln	Asn	Pro	Thr	Glu	Val	Cys	Pro				
				85					90						

<210> 25  
 <211> 95  
 <212> PRT  
 <213> Mus musculus

Met	Val	Ile	Cys	Cys	Ala	Ala	Val	Asn	Cys	Ser	Asn	Arg	Gln	Gly	Lys
1				5					10					15	
Gly	Glu	Lys	Arg	Ala	Val	Ser	Phe	His	Arg	Phe	Pro	Leu	Lys	Asp	Ser
			20					25					30		
Lys	Arg	Leu	Ile	Gln	Trp	Leu	Lys	Ala	Val	Gln	Arg	Asp	Asn	Trp	Thr
		35					40					45			
Pro	Thr	Lys	Tyr	Ser	Phe	Leu	Cys	Ser	Glu	His	Phe	Thr	Lys	Asp	Ser
	50					55					60				
Phe	Ser	Lys	Arg	Leu	Glu	Asp	Gln	His	Arg	Leu	Leu	Lys	Pro	Thr	Ala
65				70						75					80
Val	Pro	Ser	Ile	Phe	His	Leu	Ser	Glu	Lys	Lys	Arg	Gly	Ala	Gly	
				85					90					95	

<210> 26  
 <211> 52  
 <212> PRT  
 <213> Mus musculus

Ile	Leu	Gln	Ala	Phe	Gly	Ser	Leu	Lys	Lys	Gly	Asp	Val	Leu	Cys	Ser
1				5					10					15	
Arg	His	Phe	Lys	Lys	Thr	Asp	Phe	Asp	Arg	Ser	Thr	Leu	Asn	Thr	Lys
			20					25					30		
Leu	Lys	Ala	Gly	Ala	Ile	Pro	Ser	Ile	Phe	Glu	Cys	Pro	Tyr	His	Leu
		35					40					45			
Gln	Glu	Lys	Arg												
	50														

<210> 27  
 <211> 103  
 <212> PRT  
 <213> Mus musculus

Met	Pro	Arg	His	Cys	Ser	Ala	Ala	Gly	Cys	Cys	Thr	Arg	Asp	Thr	Arg
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

1		5		10		15									
Glu	Thr	Arg	Asn	Arg	Gly	Ile	Ser	Phe	His	Arg	Leu	Pro	Lys	Lys	Asp
		20					25						30		
Asn	Pro	Arg	Arg	Gly	Leu	Trp	Leu	Ala	Asn	Cys	Gln	Arg	Leu	Asp	Pro
	35						40					45			
Ser	Gly	Gln	Gly	Leu	Trp	Asp	Pro	Thr	Ser	Glu	Tyr	Ile	Tyr	Phe	Cys
	50					55					60				
Ser	Lys	His	Phe	Glu	Glu	Asn	Cys	Phe	Glu	Leu	Val	Gly	Ile	Ser	Gly
65				70					75						80
Tyr	His	Arg	Leu	Lys	Glu	Gly	Ala	Val	Pro	Thr	Ile	Phe	Glu	Ser	Phe
			85					90						95	
Ser	Lys	Leu	Arg	Arg	Thr	Ala									
		100													

<210> 28  
 <211> 90  
 <212> PRT  
 <213> Mus musculus

<400> 28
Met Pro Gly Phe Thr Cys Cys Val Pro Gly Cys Tyr Asn Asn Ser His
1 5 10 15
Arg Asp Lys Ala Leu His Phe Tyr Thr Phe Pro Lys Asp Ala Glu Leu
20 25 30
Arg Arg Leu Trp Leu Lys Asn Val Ser Arg Ala Gly Val Ser Gly Cys
35 40 45
Phe Ser Thr Phe Gln Pro Thr Thr Gly His Arg Leu Cys Ser Val His
50 55 60
Phe Gln Gly Gly Arg Lys Thr Tyr Thr Val Arg Val Pro Thr Ile Phe
65 70 75 80
Pro Leu Arg Gly Val Asn Glu Arg Lys Val
85 90

<210> 29  
 <211> 96  
 <212> PRT  
 <213> Mus musculus

<400> 29
Met Pro Asn Phe Cys Ala Ala Pro Asn Cys Thr Arg Lys Ser Thr Gln
1 5 10 15
Ser Asp Leu Ala Phe Phe Arg Phe Pro Arg Asp Pro Ala Arg Cys Gln
20 25 30
Lys Trp Val Glu Asn Cys Arg Arg Ala Asp Leu Glu Asp Lys Thr Pro
35 40 45
Asp Gln Leu Asn Lys His Tyr Arg Leu Cys Ala Lys His Phe Glu Thr
50 55 60
Ser Met Ile Cys Arg Thr Ser Pro Tyr Arg Thr Val Leu Arg Asp Asn
65 70 75 80
Ala Ile Pro Thr Ile Phe Asp Leu Thr Ser His Leu Asn Asn Pro His
85 90 95

<210> 30  
 <211> 24

<212> PRT  
<213> Rattus norvegicus

<400> 30

Met Pro Thr Asn Cys Ala Ala Ala Gly Cys Ala Ala Thr Tyr Asn Lys  
1 5 10 15  
His Ile Asn Ile Ser Phe His Arg  
20

<210> 31

<211> 85

<212> PRT

<213> Rattus norvegicus

<400> 31

Arg Gln Cys Cys Asn Arg Tyr Ser Ser Arg Arg Lys Gln Leu Thr Phe  
1 5 10 15  
His Arg Phe Pro Phe Ser Arg Pro Glu Leu Leu Arg Glu Trp Val Leu  
20 25 30  
Asn Ile Gly Arg Ala Asp Phe Lys Pro Lys Gln His Thr Val Ile Cys  
35 40 45  
Ser Glu His Phe Arg Pro Glu Cys Phe Ser Ala Phe Gly Asn Arg Lys  
50 55 60  
Asn Leu Lys His Asn Ala Val Pro Thr Val Phe Ala Phe Gln Asn Pro  
65 70 75 80  
Ala Gln Val Cys Pro  
85

<210> 32

<211> 70

<212> PRT

<213> Rattus norvegicus

<400> 32

Arg Phe Pro Leu Lys Asp Ser Lys Arg Leu Ile Gln Trp Leu Lys Ala  
1 5 10 15  
Val Gln Arg Asp Asn Trp Thr Pro Thr Lys Tyr Ser Phe Leu Cys Ser  
20 25 30  
Glu His Phe Thr Lys Asp Ser Phe Ser Lys Arg Leu Glu Asp Gln His  
35 40 45  
Arg Leu Leu Lys Pro Thr Ala Val Pro Ser Ile Phe His Leu Ser Glu  
50 55 60  
Lys Lys Arg Gly Ala Gly  
65 70

<210> 33

<211> 55

<212> PRT

<213> Rattus norvegicus

<400> 33

Met Val Lys Cys Cys Ser Ala Ile Gly Cys Ala Ser Arg Cys Leu Pro  
1 5 10 15  
Asn Ser Lys Leu Lys Gly Leu Thr Phe His Val Phe Pro Thr Asp Glu



	20		25		30
Asn Ile Lys Arg Lys Trp Val Leu Ala Met Lys Arg Leu Asp Val Asn					
	35		40		45
Thr Ala Gly Ile Trp Glu Pro					
	50		55		

<210> 34  
 <211> 103  
 <212> PRT  
 <213> Rattus norvegicus

<400> 34

Met Pro Arg His Cys Ser Ala Ala Gly Cys Cys Thr Arg Asp Thr Arg					
1	5		10		15
Glu Thr Arg Asn Arg Gly Ile Ser Phe His Arg Leu Pro Lys Lys Asp					
	20		25		30
Asn Pro Arg Arg Gly Leu Trp Leu Ala Asn Cys Gln Arg Leu Asp Pro					
	35		40		45
Ser Gly Gln Gly Leu Trp Asp Pro Thr Ser Glu Tyr Ile Tyr Phe Cys					
50		55		60	
Ser Lys His Phe Glu Glu Asn Cys Phe Glu Leu Val Gly Ile Ser Gly					
65	70		75		80
Tyr His Arg Leu Lys Glu Gly Ala Val Pro Thr Ile Phe Glu Ser Phe					
	85		90		95
Ser Lys Leu Arg Arg Thr Ala					
	100				

<210> 35  
 <211> 90  
 <212> PRT  
 <213> Rattus norvegicus

<400> 35

Met Pro Gly Phe Thr Cys Cys Val Pro Gly Cys Tyr Asn Asn Ser His					
1	5		10		15
Arg Asp Lys Ala Leu His Phe Tyr Thr Phe Pro Lys Asp Ala Glu Leu					
	20		25		30
Arg Arg Leu Trp Leu Lys Asn Val Ser Arg Ala Gly Val Ser Gly Cys					
	35		40		45
Phe Ser Thr Phe Gln Pro Thr Thr Gly His Arg Leu Cys Ser Val His					
50		55		60	
Phe Gln Gly Gly Arg Lys Thr Tyr Thr Val Arg Val Pro Thr Ile Phe					
65	70		75		80
Pro Leu Arg Gly Val Asn Glu Arg Lys Val					
	85		90		

<210> 36  
 <211> 96  
 <212> PRT  
 <213> Rattus norvegicus

<400> 36

Met Pro Asn Phe Cys Ala Ala Pro Asn Cys Thr Arg Lys Ser Thr Gln					
1	5		10		15

Ser Asp Leu Ala Phe Phe Arg Phe Pro Arg Asp Pro Ala Arg Cys Gln  
20 25 30  
Lys Trp Val Glu Asn Cys Arg Arg Ala Asp Leu Glu Asp Lys Thr Pro  
35 40 45  
Asp Gln Leu Asn Lys His Tyr Arg Leu Cys Ala Lys His Phe Glu Thr  
50 55 60  
Ser Met Ile Cys Arg Thr Ser Pro Tyr Arg Thr Val Leu Arg Asp Asn  
65 70 75 80  
Ala Ile Pro Thr Ile Phe Asp Leu Thr Ser His Leu Asn Asn Pro His  
85 90 95

<210> 37  
<211> 94  
<212> PRT  
<213> Gallus gallus

<400> 37  
Met Val Ile Cys Cys Ala Ala Ala Asn Cys Ser Asn Arg Gln Gly Lys  
1 5 10 15  
Ala Leu Arg Gly Ala Val Ser Phe His Arg Phe Pro Leu Lys Asp Ser  
20 25 30  
Lys Arg Leu Ile Gln Trp Leu Lys Ala Val Gln Arg Asp Asn Trp Thr  
35 40 45  
Pro Thr Lys Tyr Ser Phe Leu Cys Ser Glu His Phe Thr Lys Asp Ser  
50 55 60  
Phe Ser Arg Arg Leu Glu Asp Gln His Arg Leu Leu Lys Pro Thr Ala  
65 70 75 80  
Val Pro Thr Ile Phe Gln Leu Ala Glu Lys Lys Arg Asp Asn  
85 90

<210> 38  
<211> 94  
<212> PRT  
<213> Gallus gallus

<400> 38  
Met Pro Arg Tyr Cys Ala Ala Ser Tyr Cys Lys Asn Arg Gly Gly Gln  
1 5 10 15  
Ser Ala Arg Asp Gln Arg Lys Leu Ser Phe Tyr Pro Phe Pro Leu His  
20 25 30  
Asp Lys Glu Arg Leu Glu Lys Trp Leu Arg Asn Met Lys Arg Asp Ala  
35 40 45  
Trp Thr Pro Ser Lys His Gln Leu Leu Cys Ser Asp His Phe Thr Pro  
50 55 60  
Asp Ser Leu Asp Val Arg Trp Gly Ile Arg Tyr Leu Lys His Thr Ala  
65 70 75 80  
Val Pro Thr Ile Phe Ser Ser Pro Asp Asp Glu Glu Lys Gly  
85 90

<210> 39  
<211> 102  
<212> PRT  
<213> Gallus gallus

<400> 39

Met Pro Arg His Cys Ser Ala Ala Gly Cys Cys Thr Arg Asp Thr Arg  
1 5 10 15  
Glu Thr Arg Ser Arg Gly Ile Ser Phe His Arg Leu Pro Lys Lys Asp  
20 25 30  
Asn Pro Arg Arg Ala Leu Trp Leu Glu Asn Ser Arg Arg Asp Ala  
35 40 45  
Ser Gly Glu Gly Arg Trp Asp Pro Ala Ser Lys Tyr Ile Tyr Phe Cys  
50 55 60  
Ser Gln His Phe Glu Lys Ser Cys Phe Glu Ile Val Gly Phe Ser Gly  
65 70 75 80  
Tyr His Arg Leu Lys Glu Gly Ala Val Pro Thr Val Phe Glu Ser Thr  
85 90 95  
Ser Pro Arg Pro Pro Arg  
100

<210> 40

<211> 27

<212> PRT

<213> Gallus gallus

<400> 40

Met Thr Arg Ser Cys Ser Ala Leu Gly Cys Ser Ala Arg Asp Asn Gly  
1 5 10 15  
Arg Ser Arg Glu Arg Gly Ile Ser Phe His Gln  
20 25

<210> 41

<211> 90

<212> PRT

<213> Xenopus laevi

<400> 41

Met Val Gln Ser Cys Ser Ala Tyr Gly Cys Lys Asn Arg Tyr Asp Lys  
1 5 10 15  
Asp Arg Pro Ile Ser Phe His Lys Phe Pro Leu Lys Arg Pro Leu Leu  
20 25 30  
Cys Lys Lys Trp Glu Ala Ala Val Arg Arg Ala Asp Phe Lys Pro Thr  
35 40 45  
Lys Tyr Ser Ser Ile Cys Ser Asp His Phe Thr Ala Asp Cys Phe Lys  
50 55 60  
Arg Glu Cys Asn Asn Lys Leu Leu Lys Asp Asn Ala Val Pro Thr Val  
65 70 75 80  
Phe Ala Leu Ala Glu Ile Lys Lys Lys Met  
85 90

<210> 42

<211> 103

<212> PRT

<213> Xenopus laevi

<400> 42

Met Pro Arg His Cys Ser Ala Leu Gly Cys Thr Thr Arg Asp Ser Arg  
1 5 10 15

Gln Thr Arg Asn Asn Asn Ile Ser Phe His Arg Leu Pro Arg Lys Asp  
                   20                  25                  30  
 Asp Pro Arg Arg Asn Leu Trp Ile Ala Asn Cys Gln Arg Thr Asp Pro  
                   35                  40                  45  
 Ser Gly Lys Gly Leu Trp Asp Pro Ser Ser Asp Tyr Val Tyr Phe Cys  
           50                  55                  60  
 Ser Lys His Phe Glu Lys Ser Cys Phe Glu Val Val Gly Thr Ser Gly  
 65                  70                  75                  80  
 Tyr His Arg Leu Lys Glu Asp Ala Val Pro Thr Leu Phe Leu Ser Ser  
                   85                  90                  95  
 Ala Lys Leu Arg Arg Ala Ala  
                   100

<210> 43  
 <211> 90  
 <212> PRT  
 <213> Xenopus laevi

<400> 43  
 Met Val Arg Ser Cys Ser Ala Ala Asn Cys Val Asn Arg Gln Thr Ala  
   1                  5                  10                  15  
 Leu Asn Lys Arg Lys Gly Ile Thr Phe His Arg Phe Pro Lys Glu Gln  
                   20                  25                  30  
 Ala Arg Arg Gln Leu Trp Ile Thr Ala Val Thr His Ser His Ala Ala  
                   35                  40                  45  
 Val Gly Thr Asp Trp Thr Pro Ser Ile His Ser Ser Leu Cys Ser Gln  
           50                  55                  60  
 His Phe Asn Asn Thr Gln Phe Asp Arg Thr Gly Gln Thr Val Arg Leu  
 65                  70                  75                  80  
 Arg Asp Ser Ala Val Pro Thr Val Phe Ser  
                   85                  90

<210> 44  
 <211> 99  
 <212> PRT  
 <213> Xenopus laevi

<400> 44  
 Met Pro Val Ser Cys Ala Ala Ser Gly Cys Lys Ser Arg Tyr Thr Met  
   1                  5                  10                  15  
 Asp Ala Arg Glu Lys Gly Ile Thr Phe His Arg Phe Pro Arg Ser Asn  
                   20                  25                  30  
 Pro Thr Leu Leu Glu Lys Trp Arg Leu Ala Met Arg Arg Ser Thr Arg  
                   35                  40                  45  
 Asn Gly Glu Leu Trp Met Pro Ser Arg Tyr Gln Arg Leu Cys Ser Leu  
           50                  55                  60  
 His Phe Lys Gln Cys Cys Phe Asp Thr Thr Gly Gln Thr Lys Arg Leu  
 65                  70                  75                  80  
 Arg Glu Asp Val Ile Pro Thr Ile Phe Asp Phe Pro Glu Glu Thr His  
                   85                  90                  95  
 Val Ile Phe

<210> 45

<211> 90  
 <212> PRT  
 <213> *Xenopus laevis*

<400> 45  
 Met Pro Ala Cys Ala Ala Ile Asn Cys Thr Ser Arg Gln Thr Arg Gly  
 1 5 10 15  
 Cys Gly Lys Ser Phe His Lys Phe Pro His Gly Arg Pro Glu Val Leu  
 20 25 30  
 Lys Lys Trp Val Met Asn Met Arg Arg Asp Lys Phe Lys Pro Ser Ser  
 35 40 45  
 Lys Ala Val Leu Cys Ser Asp His Phe Glu Glu Phe Cys Phe Asp Arg  
 50 55 60  
 Thr Gly Gln Thr Ile Arg Leu Arg Thr Asp Ala Val Pro Thr Val Phe  
 65 70 75 80  
 Thr Phe Pro Gly Lys Met Lys Lys Asp Arg  
 85 90

<210> 46  
 <211> 105  
 <212> PRT  
 <213> *Xenopus laevis*

<400> 46  
 Met Pro His Cys Val Val Ser Asn Cys Val His Phe Asn Tyr Lys Lys  
 1 5 10 15  
 Ser Asn Leu His Gly Val Ala Leu His Pro Phe Pro Asn Asp Leu Ser  
 20 25 30  
 Arg Ile Lys Leu Trp Leu Gln Gln Ile Gly Leu Thr Thr Asp Glu Ile  
 35 40 45  
 Asp Tyr Leu Ala Gln Lys Val Val Glu Gly Lys Arg Lys Lys Thr Asp  
 50 55 60  
 Ser His Arg Met Cys Ser Ala His Phe Thr Pro Asn Cys Tyr Ile Val  
 65 70 75 80  
 Gln Asp Ala Lys Leu Val Leu Arg Ser Asp Ala Ile Pro Thr Met Phe  
 85 90 95  
 Pro Gly Leu Ser Ser Ser Thr Thr Asn  
 100 105

<210> 47  
 <211> 104  
 <212> PRT  
 <213> *Xenopus laevis*

<400> 47  
 Met Pro Lys Cys Ile Val Thr Lys Cys Pro His Lys Thr Gly Gln Lys  
 1 5 10 15  
 Glu Leu Tyr Pro Ser Val Ile Leu His Pro Phe Pro Gly Asn Ile Glu  
 20 25 30  
 Lys Ile Lys Gln Trp Leu Leu Gln Thr Gly Glu Asp Tyr Gly Asp Tyr  
 35 40 45  
 Glu Val Phe Ala Glu Lys Val Leu Glu Ala Lys Lys Thr Asp Ala Tyr  
 50 55 60  
 Arg Ile Cys Ser Arg His Phe Ala Glu Asp Gln Tyr Val Lys Arg Gly  
 65 70 75 80

Pro Arg Lys Leu Leu Ser Lys Asp Ala Val Pro Thr Ile Phe Ser Asn  
85 90 95  
Leu His Pro Leu Ile Gln Leu His  
100

<210> 48  
<211> 102  
<212> PRT  
<213> *Xenopus laevis*

<400> 48  
Met Pro Arg Cys Val Val Lys Asn Cys Pro His Trp Thr Gly Lys Lys  
1 5 10 15  
Gly Ser Gln Val Ile Leu His Gly Phe Pro Asn Asn Ser Arg Leu Ile  
20 25 30  
Lys Leu Trp Leu Ser Gln Thr Lys Gln Asp Phe Gly Asp Val Glu Asp  
35 40 45  
Phe Thr Gln Lys Ile Leu Glu Gly Lys Lys Asn Asp Leu Tyr Arg Leu  
50 55 60  
Cys Ser Lys His Phe Thr Asn Asp Ser Tyr Glu Ile Arg Gly Thr Lys  
65 70 75 80  
Arg Phe Leu Lys Tyr Gly Ala Val Pro Thr Val Phe Glu Asp Thr Pro  
85 90 95  
Pro Leu Lys Arg Arg Lys  
100

<210> 49  
<211> 104  
<212> PRT  
<213> *Xenopus laevis*

<400> 49  
Met Pro Asn Cys Ile Val Lys Asp Cys Arg His Lys Ser Gly Gln Lys  
1 5 10 15  
Ile Gln Asn Pro Asp Val Val Leu His Pro Phe Pro Asn Asn Ile Asn  
20 25 30  
Met Ile Lys Asn Trp Leu Leu Gln Thr Gly Gln Asp Phe Gly Asp Ile  
35 40 45  
Asp Val Leu Ala Asp Lys Ile Leu Lys Gly Lys Lys Thr Ala Asn Phe  
50 55 60  
Arg Met Cys Ser Cys His Phe Thr Arg Asp Ser Tyr Met Ala Arg Gly  
65 70 75 80  
Ser Lys Thr Thr Leu Lys Pro Asn Ala Ile Pro Thr Ile Phe Pro Val  
85 90 95  
Ile Leu Pro Thr Thr Val Pro Ser  
100

<210> 50  
<211> 99  
<212> PRT  
<213> *Xenopus laevis*

<400> 50  
Met Pro Lys Cys Phe Val Gln Ser Cys Pro His Tyr Thr Gly Arg Asn

1		5		10		15									
Gly	Lys	Pro	Asp	Asn	Val	Ile	Leu	His	Thr	Phe	Pro	Arg	Cys	Lys	Lys
		20						25					30		
Gln	Val	Gln	Val	Trp	Leu	Ser	Arg	Thr	Gly	Glu	Arg	Tyr	Glu	Asn	Met
		35					40					45			
Ala	Glu	Phe	Val	Thr	Tyr	Ile	Thr	Gln	Arg	Cys	Ser	Asn	Phe	Arg	Met
	50					55					60				
Cys	Ser	Glu	His	Phe	Thr	Asp	Asp	Cys	Tyr	Ile	Thr	Val	Glu	Gly	Lys
65					70					75					80
Arg	Arg	Leu	Met	Glu	Asn	Ser	Ala	Pro	Thr	Ile	Phe	Lys	Thr	Thr	Phe
				85					90					95	
Arg	Gln	Asn													

<210> 51  
 <211> 104  
 <212> PRT  
 <213> Xenopus laevi

<400> 51
Met Thr Lys Cys Ile Val Lys Gly Cys Arg His Thr Thr Gly Gln Lys
1 5 10 15
Leu Lys Phe Pro His Ile Val Met His Ala Phe Pro Ser Asn Leu Lys
20 25 30
Met Ile Lys Val Trp Leu Lys Gln Thr Gly Gln Tyr Gly Asn Asn Leu
35 40 45
Glu Glu Met Ala Leu Lys Val Leu Gly Gly Lys Lys Ser Asp Ser Tyr
50 55 60
Arg Leu Cys Ser Ala His Phe Thr Val Asp Ser Tyr Ala Leu Arg Arg
65 70 75 80
Ser Lys Asn Met Leu Lys Lys Asp Ala Phe Pro Thr Leu Phe Gly Gln
85 90 95
Asn Gln Ile Asn Ala Ala Asn Val
100

<210> 52  
 <211> 84  
 <212> PRT  
 <213> Xenopus laevi

<400> 52
Met Pro Lys Cys Ile Val Ile His Cys Pro His Ser Cys Ser Lys Lys
1 5 10 15
Val Thr Lys Asn Thr Gly Val Val Met His Thr Phe Pro Phe Asn Leu
20 25 30
Asp Arg Ile Lys Asn Trp Leu Leu Ser Ile Asp Gln Asn Phe Gly Asn
35 40 45
Ile Asp Thr Leu Ala Asn Arg Ile Leu Glu Glu Lys Lys Lys His Ser
50 55 60
Asp Leu Tyr Arg Leu Cys Ser Glu His Phe Thr Pro Gln Cys Tyr Ile
65 70 75 80
Ser Thr Gly Glu

<210> 53  
 <211> 104  
 <212> PRT  
 <213> *Xenopus laevis*

<400> 53  
 Met Pro Ser Cys Ile Val Lys Gly Cys Pro His Arg Thr Gly Gln Lys  
 1 5 10 15  
 Asp Lys Phe Pro Asn Val Thr Leu His Asn Phe Pro Lys Thr Ile Pro  
 20 25 30  
 Lys Ile Lys Asn Trp Leu Trp Gln Thr Gly Gln Tyr Gly Glu Asp Ser  
 35 40 45  
 Asp Ala Ile Ala Glu Glu Ile Leu Gln Gly Leu Lys Thr Cys Arg His  
 50 55 60  
 Arg Met Cys Ser Met His Phe Ser Glu Asn Cys Phe Ile Thr Leu Gly  
 65 70 75 80  
 Ser Lys Arg Val Leu Thr Arg Asn Ala Val Pro Thr Ile Phe Lys Pro  
 85 90 95  
 Gln Thr Thr Pro Ala Ile Leu Ala  
 100

<210> 54  
 <211> 104  
 <212> PRT  
 <213> *Xenopus laevis*

<400> 54  
 Met Pro Lys Cys Ile Leu Asn Gly Cys Pro Tyr Arg Thr Gly Gln Lys  
 1 5 10 15  
 Leu Lys Phe Pro Asp Ile Val Leu His Pro Phe Pro Lys Ser Met Glu  
 20 25 30  
 Met Ile Arg Asn Trp Leu Phe Gln Thr Gly Gln His Ala Glu Asp Val  
 35 40 45  
 Glu Ser Leu Ser Gln Arg Ile Tyr Gln Gly Leu Lys Thr Ser Asn Phe  
 50 55 60  
 Arg Met Cys Ser Lys His Phe Thr Gln Asp Cys Tyr Met Gln Val Gly  
 65 70 75 80  
 Ser Arg Lys Cys Leu Lys Pro Asn Ala Val Pro Thr Val Phe Glu Ser  
 85 90 95  
 Tyr Asn Val Pro Val Thr Thr Phe  
 100

<210> 55  
 <211> 105  
 <212> PRT  
 <213> *Xenopus laevis*

<400> 55  
 Asn Asn Ala Ser Cys Ile Val Arg Gly Cys His His Ser Thr Ala Arg  
 1 5 10 15  
 Lys Cys Leu Ser Pro Gly Ile Ala Leu His Gly Phe Pro Asn Asn Leu  
 20 25 30  
 Ser Arg Ile Lys Gln Trp Leu Val Asn Ile Gly Gln Asn Val Gly Asp  
 35 40 45  
 Ile Asp Asp Phe Ala Gln Lys Val Leu Asp Gly Lys Lys Gln Asn Ser



50		55		60
Tyr Arg Ile Cys Ser Ala His Phe Ser Ser Asp Cys Phe Val Gln Phe				
65		70		75
Gly Tyr Ser Lys Gly Leu Lys Ala Asp Ala Val Pro Thr Ile Phe Ala				80
	85		90	95
Trp Asn Thr Pro Glu Ser Arg Gly Arg				
100		105		

<210> 56  
 <211> 107  
 <212> PRT  
 <213> *Xenopus laevis*

<400> 56
Met Pro Ser Cys Ile Val Lys Gly Cys Arg His Lys Ser Gly Gln Lys
1 5 10 15
Val Leu Tyr Pro Asp Val Val Leu His Ser Phe Pro Asn Asn Ile His
20 25 30
Met Ile Lys Asn Trp Leu Leu Gln Thr Gly Gln Val Phe Gly Asp Ile
35 40 45
Asp Ala Phe Ala Glu Lys Val Leu Lys Gly Asn Lys Thr Ser Ala Phe
50 55 60
Arg Met Cys Ser Arg His Phe Thr Arg Asp Ser Tyr Met Ala Lys Gly
65 70 75 80
Ser Lys Ile Thr Leu Lys Pro Asn Ala Val Pro Thr Ile Phe Asn Thr
85 90 95
Leu Pro Pro Ala Ala Ala Val Pro Ser Leu Met
100 105

<210> 57  
 <211> 91  
 <212> PRT  
 <213> *Danio rerio*

<400> 57
Met Val Gln Ser Cys Ser Ala Tyr Gly Cys Asn Asn Arg Tyr Gln Lys
1 5 10 15
Asp Arg Ile Ile Ser Phe His Lys Phe Pro Leu Ala Arg Pro Glu Val
20 25 30
Cys Val Gln Trp Val Ser Ala Met Ser Arg Arg Asn Phe Lys Pro Thr
35 40 45
Lys Tyr Ser Asn Ile Cys Ser Gln His Phe Thr Ser Asp Cys Phe Lys
50 55 60
Gln Glu Cys Asn Asn Arg Val Leu Lys Asp Asn Ala Val Pro Ser Leu
65 70 75 80
Phe Thr Leu Gln Thr Gln Asp Pro Phe Ser Ala
85 90

<210> 58  
 <211> 103  
 <212> PRT  
 <213> *Danio rerio*

<400> 58

Met	Pro	Arg	His	Cys	Ser	Ala	Val	Gly	Cys	Lys	Ser	Arg	Asp	Thr	Lys
1				5					10					15	
Asp	Val	Arg	Lys	Ser	Gly	Ile	Thr	Phe	His	Arg	Leu	Pro	Lys	Lys	Gly
		20						25					30		
Asn	Pro	Arg	Arg	Thr	Thr	Trp	Ile	Ile	Asn	Ser	Arg	Arg	Lys	Gly	Pro
		35					40					45			
Glu	Gly	Lys	Gly	Gln	Trp	Asp	Pro	Gln	Ser	Gly	Phe	Ile	Tyr	Phe	Cys
	50					55					60				
Ser	Lys	His	Phe	Thr	Pro	Asp	Ser	Phe	Glu	Leu	Ser	Gly	Val	Ser	Gly
65					70					75					80
Tyr	His	Arg	Leu	Lys	Asp	Asp	Ala	Ile	Pro	Thr	Val	Phe	Glu	Ile	Glu
				85					90					95	
Pro	His	Lys	Lys	Gly	Thr	Ala									
				100											

<210> 59  
 <211> 90  
 <212> PRT  
 <213> Danio rerio

Met	Pro	Gly	Phe	Thr	Cys	Cys	Val	Pro	Gly	Cys	Tyr	Asn	Asn	Ser	His
1				5					10					15	
Arg	Asp	Arg	Asp	Leu	Arg	Phe	Tyr	Thr	Phe	Pro	Lys	Asp	Pro	Thr	Gln
		20						25					30		
Arg	Glu	Ile	Trp	Leu	Lys	Asn	Ile	Ser	Arg	Ala	Gly	Val	Ser	Gly	Cys
		35					40					45			
Phe	Ser	Thr	Phe	Gln	Pro	Thr	Thr	Gly	His	Arg	Val	Cys	Ser	Val	His
	50					55					60				
Phe	Pro	Gly	Gly	Arg	Lys	Thr	Tyr	Thr	Ile	Arg	Val	Pro	Thr	Leu	Phe
65					70					75					80
Pro	Leu	Arg	Gly	Val	Asn	Glu	Arg	Arg	Ser						
				85					90						

<210> 60  
 <211> 96  
 <212> PRT  
 <213> Danio rerio

Met	Pro	Asn	Phe	Cys	Ala	Ala	Leu	Asn	Cys	Ser	Arg	Asn	Ser	Thr	His
1				5					10					15	
Ser	Val	Leu	Ala	Phe	Phe	Arg	Phe	Pro	Arg	Asp	Pro	Glu	Arg	Cys	Lys
		20						25				30			
Lys	Trp	Val	Glu	Asn	Cys	Ser	Arg	Ser	Asp	Leu	Lys	Asp	Lys	Thr	Pro
		35					40					45			
Asp	His	Leu	Asn	Lys	Tyr	His	Arg	Leu	Cys	Ala	Arg	His	Phe	Glu	Pro
	50					55					60				
Asn	Leu	Ile	Thr	Lys	Thr	Ser	Pro	Phe	Arg	Thr	Val	Leu	Lys	Asp	Ser
65					70					75					80
Ala	Val	Pro	Thr	Ile	Phe	Asp	Asn	Pro	Phe	Lys	Arg	Ser	Asn	Asn	Glu
				85					90					95	

<210> 61

<211> 99  
 <212> PRT  
 <213> Danio rerio

<400> 61

Met	Pro	Tyr	Lys	Cys	Val	Ala	Tyr	Gly	Cys	Gly	Lys	Ile	Ser	Gly	Gln
1				5					10					15	
Asn	Val	Ser	Met	Phe	Arg	Phe	Pro	Lys	Asp	Pro	Glu	Glu	Phe	Ser	Lys
		20						25					30		
Trp	Gln	Arg	Gln	Val	Gln	Lys	Thr	Arg	Arg	Asn	Trp	Leu	Ala	Asn	Thr
		35					40					45			
Tyr	Ser	His	Leu	Cys	Asn	Glu	His	Phe	Thr	Lys	Asp	Cys	Phe	Glu	Pro
	50					55					60				
Lys	Thr	Tyr	Val	Thr	Ala	Lys	Ala	Ser	Gly	Phe	Lys	Arg	Leu	Lys	Leu
65					70					75					80
Lys	Asp	Gly	Ala	Val	Pro	Thr	Val	Phe	Ile	Arg	Arg	Arg	Cys	Arg	Lys
				85					90					95	
Cys	Gly	Gly													

<210> 62  
 <211> 90  
 <212> PRT  
 <213> Danio rerio

<400> 62

Met	Gly	Gly	Cys	Ser	Ala	Pro	Asn	Cys	Ser	Asn	Ser	Thr	Thr	Ile	Gly
1				5					10					15	
Lys	Gln	Leu	Phe	Arg	Phe	Pro	Lys	Asp	Pro	Val	Arg	Met	Arg	Lys	Trp
		20						25					30		
Leu	Val	Asn	Cys	Arg	Arg	Asp	Phe	Val	Pro	Thr	Pro	Cys	Ser	Arg	Leu
		35					40					45			
Cys	Gln	Asp	His	Phe	Glu	Glu	Ser	Gln	Phe	Glu	Glu	Ile	Ala	Arg	Ser
	50					55					60				
Pro	Ala	Gly	Gly	Arg	Lys	Leu	Lys	Pro	Asn	Ala	Ile	Pro	Thr	Leu	Phe
65					70					75					80
Asn	Val	Pro	Asp	Pro	Pro	Ser	Pro	Val	Thr						
				85					90						

<210> 63  
 <211> 105  
 <212> PRT  
 <213> Danio rerio

<400> 63

Met	Val	Leu	Asn	Cys	Ala	Tyr	Pro	Gly	Cys	Leu	Asn	Leu	Phe	Lys	Lys
1				5					10					15	
Glu	Arg	Leu	Arg	Ser	Asn	Ser	Ser	Ser	His	Gly	Gly	Lys	Leu	Thr	Phe
		20						25					30		
His	Arg	Phe	Pro	Thr	Leu	Glu	Pro	Gly	Arg	Leu	Leu	Leu	Trp	Arg	Ala
		35					40					45			
Ala	Leu	Gly	Met	Asp	Pro	Asp	Thr	Pro	Met	Arg	Ser	Leu	Arg	Val	Trp
	50					55					60				
Arg	Ile	Cys	Ser	Glu	His	Phe	Ser	Pro	Glu	Asp	Phe	Arg	Ala	Val	Asn
65					70					75					80

Gly Asn Lys Val Leu Leu Lys Ala Ser Ala Val Pro Arg Val Tyr Ser  
85 90 95  
Thr Pro Ala Pro Gly Ser Arg Ala Asp  
100 105

<210> 64  
<211> 99  
<212> PRT  
<213> Danio rerio

<400> 64  
Met Ala Ser Ser Arg Arg Cys Tyr Cys Ser Val Pro Gly Cys Ser Asn  
1 5 10 15  
Ser Lys Lys Arg His Pro Tyr Leu Ser Phe His Asp Phe Pro Lys Asp  
20 25 30  
Glu Gly Gln Arg Lys Ser Trp Val Lys Phe Ile Arg Arg Glu Glu Gly  
35 40 45  
Pro Phe Phe Gln Ile Lys Arg Gly Ser Thr Phe Val Cys Ser Met His  
50 55 60  
Phe Lys Ala Asp Asp Ile Tyr Thr Thr Ile Ser Gly Arg Arg Lys Ile  
65 70 75 80  
Asn Pro Gly Ala Ala Pro Arg Leu Phe Ser Trp Asn Asn Trp Ser Thr  
85 90 95  
Asp Lys Val

<210> 65  
<211> 66  
<212> PRT  
<213> Danio rerio

<400> 65  
Phe Pro Lys Glu Asn Val Leu Arg Lys Gln Trp Glu Ile Ala Leu Lys  
1 5 10 15  
Arg Lys Gly Phe Ser Ala Ser Glu Ser Ser Val Leu Cys Ser Glu His  
20 25 30  
Phe Arg Pro Gln Asp Leu Asp Arg Thr Gly Gln Thr Val Arg Val Arg  
35 40 45  
Asp Gly Ala Lys Pro Ser Val Phe Ser Phe Pro Ala His Met Gln Lys  
50 55 60  
His Val  
65

<210> 66  
<211> 93  
<212> PRT  
<213> Danio rerio

<400> 66  
Ser Ser Glu His Cys Cys Val Pro Leu Cys Gly Ala Ser Ser Arg Phe  
1 5 10 15  
Asn Ser Ala Val Ser Phe His Thr Phe Pro Val Ser Thr Glu Ile Arg  
20 25 30  
Glu Lys Trp Ile Lys Asn Ile Arg Arg Glu Lys Leu Asn Ile Thr Tyr

	35					40				45									
His	Thr	Arg	Val	Cys	Cys	Arg	His	Phe	Thr	Thr	Asp	Asp	Leu	Ile	Gln				
	50					55					60								
Pro	Arg	Asn	Pro	Ile	Gly	Arg	Arg	Leu	Leu	Arg	Lys	Gly	Ala	Val	Pro				
65					70					75					80				
Thr	Leu	Phe	Lys	Trp	Asn	Gly	Tyr	Ser	Asp	Ala	Glu	Ala							
				85					90										

<210> 67  
 <211> 93  
 <212> PRT  
 <213> Danio rerio

Met	Pro	Asp	Phe	Cys	Ala	Ala	Tyr	Gly	Cys	Ser	Asn	Glu	Arg	Thr	Lys				
1				5					10					15					
Lys	Leu	Lys	Asp	Lys	Gly	Ile	Thr	Phe	His	Arg	Phe	Pro	Arg	Asp	Val				
			20					25					30						
Lys	Arg	Arg	Gln	Ala	Trp	Thr	Leu	Ala	Leu	Arg	Arg	Asp	Lys	Phe	Glu				
			35				40					45							
Pro	Lys	Pro	Arg	Ser	Leu	Leu	Cys	Ser	Cys	His	Phe	Arg	Pro	Glu	Asp				
	50					55					60								
Phe	Asp	Arg	Thr	Gly	Gln	Thr	Val	Arg	Leu	Arg	Asp	Gly	Val	Ile	Pro				
65					70					75					80				
Ser	Ile	Phe	Asn	Phe	Ser	Asn	Pro	Leu	Ser	Lys	Leu	Ser							
				85					90										

<210> 68  
 <211> 97  
 <212> PRT  
 <213> Danio rerio

Met	Pro	Val	Cys	Ser	Ala	Tyr	Lys	Cys	Lys	Lys	Arg	Ser	Asp	Arg	Glu				
1				5					10					15					
Tyr	Lys	Glu	Ala	Tyr	Lys	Arg	Gly	Glu	Phe	Ser	Phe	His	Lys	Phe	Pro				
			20					25					30						
Leu	Glu	Asp	Gly	Leu	Arg	Val	Arg	Glu	Trp	Leu	Arg	Arg	Met	Arg	Trp				
			35				40					45							
Gln	Asn	Trp	Trp	Pro	Thr	Gly	Asn	Ser	Val	Leu	Cys	Ser	Asp	His	Phe				
	50					55					60								
Glu	Lys	Asp	Cys	Phe	Glu	Gln	Val	Gly	Ser	His	Lys	Arg	Leu	Arg	Lys				
65					70					75					80				
Ser	Ala	Val	Pro	Thr	Ile	Phe	Asn	Phe	Pro	Lys	His	Leu	Gln	Trp	Lys				
				85					90						95				

Val

<210> 69  
 <211> 90  
 <212> PRT  
 <213> Danio rerio

<400> 69

Met Val Leu Val Cys Ser Ala Tyr Asn Cys Lys Asn Thr Leu Arg Asn  
1 5 10 15  
Lys Ser Val Ser Phe His Leu Phe Pro Leu Lys Asp Pro Ser Leu Leu  
20 25 30  
Lys Lys Trp Leu Lys Asn Leu Arg Trp Lys Asp Trp Lys Pro Asn Pro  
35 40 45  
Asn Ser Lys Ile Cys Ser Ala His Phe Glu Glu Lys Cys Phe Ile Leu  
50 55 60  
Glu Gly Lys Lys Thr Arg Leu His Thr Trp Ala Val Pro Thr Ile Phe  
65 70 75 80  
Ser Phe Pro Asn Arg Phe Ser Glu Arg Asn  
85 90

<210> 70  
<211> 107  
<212> PRT  
<213> Danio rerio

<400> 70  
Met Asn Ser Ile Ser Leu Lys Tyr Leu Arg Arg Glu Cys Ala Tyr Ser  
1 5 10 15  
Arg Tyr Cys Cys Val Pro Phe Cys Lys Ile Ser Ser Arg Phe Asn Ser  
20 25 30  
Val Ile Ser Phe His Lys Leu Pro Leu Asp Arg Ala Thr Arg Lys Met  
35 40 45  
Trp Leu His Asn Ile Arg Arg Lys Thr Phe Glu Val Ser Pro His Val  
50 55 60  
Arg Val Cys Ser Arg His Phe Thr Asn Asp Asp Phe Ile Glu Pro Ser  
65 70 75 80  
Tyr Pro Thr Ala Arg Arg Leu Leu Lys Lys Gly Ala Val Pro Thr Leu  
85 90 95  
Phe Arg Trp Asn Asn Asp Ser Thr Ser Gly Gln  
100 105

<210> 71  
<211> 89  
<212> PRT  
<213> Danio rerio

<400> 71  
Leu Arg Leu Arg Gln Ser Ala Ser Ser His Glu Glu Ser Leu Thr Phe  
1 5 10 15  
Tyr Ser Leu Pro Leu Gln Asp Phe Lys Arg Leu Asn Leu Trp Leu Asn  
20 25 30  
Ala Val Arg Arg Asp Thr Lys Ser Ser Ile Arg Asn Ile Arg Gly Leu  
35 40 45  
Arg Val Cys Ser Glu His Phe Ala Gln Asp Asp Phe Ser Leu Asn Arg  
50 55 60  
Gly Ser Lys Arg Arg Leu Lys Ser Thr Ala Val Pro Lys Cys Asn Glu  
65 70 75 80  
Ala Leu Pro Gln Ile Arg Arg Ala Gly  
85

<210> 72

<211> 105  
 <212> PRT  
 <213> Danio rerio

<400> 72

Met	Val	Ile	Thr	Cys	Ala	Cys	Pro	Gly	Cys	Asp	Asn	Arg	Tyr	Lys	Thr
1				5					10					15	
Leu	Arg	Leu	Arg	Ser	Asp	Ser	Lys	Phe	His	Pro	Gly	Lys	Leu	Thr	Phe
			20					25					30		
His	Lys	Phe	Pro	Thr	Ser	Asp	Pro	Glu	Arg	Leu	Lys	Leu	Trp	Leu	Leu
		35					40					45			
Ala	Leu	Gly	Leu	Asp	Ile	Asn	Thr	Pro	Leu	Ser	Val	Leu	Glu	Thr	Arg
	50					55					60				
Arg	Ile	Cys	Ser	Asp	His	Phe	Ser	Pro	Phe	Asp	Phe	Lys	Asp	Thr	Lys
65					70				75					80	
Gly	Ser	Ile	Val	Gln	Leu	Lys	Ser	Trp	Ala	Val	Pro	Met	Asn	Leu	Ser
				85				90						95	
Glu	Gln	Phe	Val	Asp	Asp	Pro	Ser	Lys							
			100					105							

<210> 73  
 <211> 96  
 <212> PRT  
 <213> Danio rerio

<400> 73

Met	Pro	Asp	Cys	Cys	Ala	Ala	Ala	Asn	Cys	Lys	Gln	Ser	Thr	Asp	Gln
1				5					10					15	
Ser	Ser	Val	Ser	Phe	Phe	Glu	Phe	Pro	Leu	Asp	Pro	Asp	Arg	Cys	Arg
			20					25					30		
Gln	Trp	Val	Gly	Arg	Cys	Asn	Arg	Pro	Asp	Leu	Gln	Thr	Lys	Thr	Pro
		35				40						45			
Glu	Asp	Leu	His	Lys	Asn	Tyr	Lys	Val	Cys	Ser	Arg	His	Phe	Glu	Thr
	50				55						60				
Ser	Met	Ile	Cys	Gln	Gln	Ser	Ala	Val	Lys	Cys	Ile	Leu	Lys	Asp	Asp
65				70					75					80	
Ala	Val	Pro	Thr	Leu	Phe	Asn	Phe	Ser	Thr	Asn	Gln	Asp	Asn	Ala	Gln
				85				90						95	

<210> 74  
 <211> 91  
 <212> PRT  
 <213> Danio rerio

<400> 74

Met	Val	Lys	Cys	Thr	Val	Gln	Gly	Cys	Ile	Asn	Phe	Ser	Asp	Leu	Arg
1				5				10						15	
Pro	Glu	Glu	Gln	Pro	Asn	Arg	Pro	Arg	Lys	Arg	Phe	Phe	Arg	Phe	Pro
			20					25					30		
Lys	Asp	Lys	Val	Leu	Val	Lys	Val	Trp	Leu	Ala	Ala	Leu	Arg	Asp	Thr
		35				40						45			
Glu	Arg	Glu	Ile	Thr	Asp	Leu	His	Arg	Ile	Cys	Glu	Asp	His	Phe	Leu
	50				55					60					
Ser	His	His	Ile	Thr	Ala	Asp	Gly	Ile	Ser	Pro	Asp	Ala	Ile	Pro	Ile
65				70				75						80	

Met Pro Pro Leu Asp Gly Pro Val Gly Asn Trp  
85 90

<210> 75  
<211> 84  
<212> PRT  
<213> Danio rerio

<400> 75  
Met Pro Ile Ser Cys Ser Ala Val Asp Cys Ser Asn Arg Phe Val Lys  
1 5 10 15  
Gly Ser Glu Ile Arg Phe Tyr Arg Phe Pro Ile Ser Lys Pro Gln Leu  
20 25 30  
Ala Glu Gln Trp Val Arg Ser Leu Gly Arg Lys Asn Phe Val Pro Thr  
35 40 45  
Gln Asn Ser Cys Leu Cys Ser Glu His Phe Gln Pro Asp Cys Phe Arg  
50 55 60  
Asp Tyr Asn Gly Lys Leu Phe Leu Arg Glu Asp Ala Val Pro Thr Ile  
65 70 75 80  
Phe Ser Asn Ser

<210> 76  
<211> 95  
<212> PRT  
<213> Oryzias latipes

<400> 76  
Met Pro Asn Phe Cys Ala Ala Pro Asn Cys Thr Arg Lys Ser Thr Gln  
1 5 10 15  
Ser Asp Leu Ala Phe Phe Arg Phe Pro Arg Asp Pro Glu Arg Cys Arg  
20 25 30  
Ile Trp Val Glu Asn Cys Arg Arg Ala Asp Leu Glu Ala Lys Thr Ala  
35 40 45  
Asp Gln Leu Asn Lys His Tyr Arg Leu Cys Ala Lys His Phe Asp Pro  
50 55 60  
Ala Met Val Cys Lys Thr Ser Pro Tyr Arg Thr Val Leu Lys Asp Thr  
65 70 75 80  
Ala Ile Pro Thr Ile Phe Asp Leu Thr Ser His Leu Lys Asn Pro  
85 90 95

<210> 77  
<211> 90  
<212> PRT  
<213> Oryzias latipes

<400> 77  
Met Pro Thr Gly Cys Ala His Ala Asn Cys Arg Asn Val Val Gly Lys  
1 5 10 15  
Phe Arg Gly Val Thr Phe His Lys Phe Pro Arg Asp Pro Glu Lys Leu  
20 25 30  
Ser Arg Trp Thr Lys Phe Met Lys Arg His Glu Ser Trp Val Pro Lys  
35 40 45  
Tyr Tyr Asp Arg Val Cys Ser Val His Phe Ser Ser Glu His Phe Asp



50                      55                      60  
 Arg Thr Gly Gln Thr Val Arg Leu Arg Asp Asn Ala Glu Pro Ser Leu  
 65                      70                      75                      80  
 Pro His Leu Pro Trp Arg Phe Pro Lys Ser  
                     85                      90

<210> 78  
 <211> 94  
 <212> PRT  
 <213> *Oryzias latipes*

<400> 78  
 Met Gln Asn Arg Cys Ala Val Leu Thr Cys Pro Ser Gly Lys Thr Asp  
 1                      5                      10                      15  
 Phe Gln Pro Met Phe Arg Phe Pro His Asp Gln Glu Arg Ser Arg Arg  
                     20                      25                      30  
 Trp Val Glu Lys Cys Gln Gly Glu Asn Leu Ile Gly Lys Ser Pro Glu  
                     35                      40                      45  
 Gln Leu Tyr Arg Tyr Tyr Arg Ile Cys Lys Arg His Phe Glu Thr Ser  
                     50                      55                      60  
 Ala Phe Asp Cys Asp Ala Asp Gly Ala Val Leu Lys Lys Asp Ala Val  
 65                      70                      75                      80  
 Pro Thr Ile Phe Asp Ala Ser Val Pro Pro Gln Ser Ser Gln  
                     85                      90

<210> 79  
 <211> 92  
 <212> PRT  
 <213> *Drosophila melanogaster*

<400> 79  
 Met Pro Ala His Cys Ala Val Ile Asn Cys Ser His Lys Tyr Val His  
 1                      5                      10                      15  
 Ala Gly Ser Ile Ser Phe His Arg Phe Pro Phe Lys Arg Lys Asp Leu  
                     20                      25                      30  
 Leu Gln Lys Trp Lys Glu Phe Thr Gln Arg Ser Ala Gln Trp Met Pro  
                     35                      40                      45  
 Ser Lys Trp Ser Ala Leu Cys Ser Arg His Phe Gly Asp Glu Asp Phe  
                     50                      55                      60  
 Asn Cys Ser Asn Asn Arg Lys Thr Leu Lys Lys Asn Ala Val Pro Ser  
 65                      70                      75                      80  
 Ile Arg Val Ser Glu Asp Asp Ser Met Ser Gly His  
                     85                      90

<210> 80  
 <211> 90  
 <212> PRT  
 <213> *Drosophila melanogaster*

<400> 80  
 Met Pro Thr Ile Arg Arg Cys Cys Ile Ile Gly Cys Leu Ser Asn Ser  
 1                      5                      10                      15  
 Arg Gln His Pro Ser Met Gln Phe Phe Ala Phe Pro Arg Pro Glu Asn  
                     20                      25                      30

Pro Phe His Lys Leu Trp Lys Glu Ala Cys His Ala Ser Leu Arg Arg  
35 40 45  
Ile Val Pro Phe Lys Lys Pro Val Val Cys Ala Leu His Phe Asp Pro  
50 55 60  
Ser Val Leu Gly Gly Arg Arg Leu Gln Ser Asn Ala Leu Pro Thr Leu  
65 70 75 80  
Arg Leu Glu Val Pro Ser Asn Leu Glu Ala  
85 90

<210> 81  
<211> 104  
<212> PRT  
<213> Drosophila melanogaster

<400> 81  
Met Arg Cys Ala Val Pro Asn Cys Arg Asn Phe Ser Asp Cys Arg Ser  
1 5 10 15  
Lys Arg Asn Ala Ala Gln Gln Gln Arg Leu Gly Phe Phe Arg Phe Pro  
20 25 30  
Lys Cys Pro Asp Thr Phe Lys Ala Trp Leu Ala Phe Cys Gly Tyr Thr  
35 40 45  
Glu Glu Ser Leu Lys Leu Lys Asn Pro Cys Ile Cys Ile Glu His Phe  
50 55 60  
Lys Asp Glu Asp Ile Glu Gly Ser Leu Lys Phe Glu Met Gly Leu Ala  
65 70 75 80  
Lys Lys Arg Thr Leu Arg Pro Gly Ala Val Pro Cys Val Asn Lys Ser  
85 90 95  
Gln Glu Ser Gly Ser Asp Arg Ala  
100

<210> 82  
<211> 96  
<212> PRT  
<213> Drosophila melanogaster

<400> 82  
Met Gly Gly Thr Lys Cys Cys Phe Arg Asp Cys Pro Val Gly Ser Ser  
1 5 10 15  
Arg Asn Pro Asn Met His Phe Phe Lys Phe Pro Val Lys Asp Pro Lys  
20 25 30  
Arg Leu Lys Asp Trp Val Arg Asn Cys Ser Asn Pro Asp Val Ser Asn  
35 40 45  
Ala Pro Pro Ser Lys Leu Ala Ala Lys Thr Val Cys Ala Arg His Phe  
50 55 60  
Arg Ala Glu Cys Phe Met Asn Tyr Lys Met Asp Arg Leu Ile Pro Met  
65 70 75 80  
Gln Thr Pro Thr Leu Phe Arg Ile Asn Arg Asp Leu Ala Leu Asp Tyr  
85 90 95

<210> 83  
<211> 96  
<212> PRT  
<213> Drosophila melanogaster

<400> 83

Met Ala Thr Arg Ser Cys Ala Tyr Lys Asp Cys Glu Tyr Tyr Tyr Val  
1 5 10 15  
Gly His Glu Asn Ala Leu Thr Lys Gly Arg Thr Leu Phe Ala Phe Pro  
20 25 30  
Lys Gln Pro Gln Arg Ala Arg Ile Trp His Glu Asn Gly Gln Val His  
35 40 45  
Pro Lys Ile Pro His Ser Gln Leu Phe Met Cys Ser Leu His Phe Asp  
50 55 60  
Arg Lys Phe Ile Ser Ser Ser Lys Asn Arg Thr Leu Leu Val Gly Glu  
65 70 75 80  
Ala Val Pro Phe Pro Tyr Glu Glu Ser Ser Ser Lys Pro Glu Glu Glu  
85 90 95

<210> 84

<211> 87

<212> PRT

<213> *Drosophila melanogaster*

<400> 84

Met Lys Tyr Cys Lys Phe Cys Cys Lys Ala Val Thr Gly Val Lys Leu  
1 5 10 15  
Ile His Val Pro Lys Cys Ala Ile Lys Arg Lys Leu Trp Glu Gln Ser  
20 25 30  
Leu Gly Cys Ser Leu Gly Glu Asn Ser Gln Ile Cys Asp Thr His Phe  
35 40 45  
Asn Asp Ser Gln Trp Lys Ala Ala Pro Ala Lys Gly Gln Thr Phe Lys  
50 55 60  
Arg Arg Arg Leu Asn Ala Asp Ala Val Pro Ser Lys Val Ile Glu Pro  
65 70 75 80  
Glu Pro Glu Lys Ile Lys Glu  
85

<210> 85

<211> 92

<212> PRT

<213> *Anopheles gambiae*

<400> 85

Met Pro Ala Ser Cys Val Ile Pro Asp Cys Asp Leu Lys Tyr Thr His  
1 5 10 15  
Gly Asp Asp Val Ser Phe His Lys Phe Pro Leu Lys Ser Pro Glu Leu  
20 25 30  
Leu Lys Gln Trp Ile Gln Phe Thr Gly Arg Asp Glu Gly Trp His Pro  
35 40 45  
Thr Lys Trp Ser Ala Leu Cys Ser Arg His Phe Val Ala Ser Asp Phe  
50 55 60  
Lys Gly Cys Ala Ala Arg Lys Ile Leu Leu Pro Thr Ala Val Pro Ser  
65 70 75 80  
Val Arg Asn Ala Val Ala Ala Lys Ala Gln Pro Asn  
85 90

<210> 86

<211> 108

<212> PRT  
 <213> Anopheles gambiae

<400> 86

Met	Ser	Ala	Val	Arg	Ser	Cys	Ala	Leu	Cys	Gln	Asn	Arg	Ser	Asn	Ile
1				5					10					15	
Thr	Asp	Gln	Gln	Thr	Asp	Asp	Ala	Leu	Glu	Arg	Ile	Thr	Tyr	His	Lys
		20						25					30		
Phe	Pro	Thr	Asn	Pro	Val	Arg	Arg	Asp	Arg	Trp	Ile	Glu	Phe	Cys	Asp
		35					40					45			
Leu	Pro	Lys	Glu	Ser	Phe	Pro	Lys	Ser	Ala	Tyr	Lys	Phe	Leu	Cys	Ser
	50					55					60				
Ser	His	Phe	Thr	Pro	Glu	Cys	Phe	Glu	Arg	Asp	Leu	Arg	Gly	Glu	Leu
65					70				75						80
Leu	Tyr	Gly	Thr	Lys	Arg	Met	Thr	Leu	Gln	Lys	Asp	Ala	Met	Pro	Thr
				85					90					95	
Ile	Arg	Ser	Val	Ser	Gln	Gln	Leu	Lys	Arg	Thr	Thr				
			100					105							

<210> 87  
 <211> 100  
 <212> PRT  
 <213> Anopheles gambiae

<400> 87

Met	Trp	Asp	Cys	Ala	Val	Ile	Gly	Cys	Pro	Asn	Ser	Arg	Phe	Asn	Ala
1				5					10					15	
Gln	Lys	Thr	Arg	Pro	Arg	Ile	Ser	Phe	His	Val	Phe	Pro	His	Pro	Val
		20						25				30			
Arg	Glu	Ser	Asn	Arg	Phe	Arg	Arg	Trp	Leu	Ala	Leu	Ile	Asn	Asn	Pro
		35					40					45			
Arg	Leu	Phe	Arg	Leu	Asp	Pro	Leu	Asn	Val	Phe	Lys	Ser	Val	Arg	Val
	50					55					60				
Cys	Arg	Arg	His	Phe	Gly	Pro	Asp	Cys	Phe	Asn	Gly	Val	Cys	Arg	Asn
65					70				75						80
Leu	Leu	Pro	Thr	Ala	Ile	Pro	Thr	Leu	Asn	Leu	Pro	Glu	Val	Arg	Pro
				85					90					95	
Val	Ala	Leu	Val												
			100												

<210> 88  
 <211> 95  
 <212> PRT  
 <213> Anopheles gambiae

<400> 88

Met	Gly	Ile	Arg	Lys	Cys	Ile	Val	Pro	Glu	Cys	Pro	Ser	Ser	Ser	Ala
1				5					10					15	
Arg	Pro	Glu	Asp	Arg	Gly	Val	Thr	Tyr	His	Lys	Ile	Pro	Tyr	Leu	Asp
		20						25				30			
Glu	Met	Lys	Arg	Leu	Trp	Ile	Val	Ala	Cys	His	Leu	Pro	Asp	Asp	Tyr
		35					40					45			
Phe	Ala	Thr	Lys	Ala	Ser	Asn	Val	Cys	Ser	Arg	His	Phe	Arg	Arg	Ala
	50					55					60				
Asp	Phe	Gln	Glu	Phe	Lys	Gly	Lys	Lys	Tyr	Val	Leu	Lys	Leu	Gly	Val

65                      70                      75                      80  
Val Pro Thr Val Phe Pro Trp Thr Val Thr Lys Pro Pro Gly Glu  
                         85                      90                      95

<210> 89  
<211> 107  
<212> PRT  
<213> Anopheles gambiae

<400> 89  
Met Gly Lys Ile Ser Gly Ser His Cys Leu Val Leu Gly Cys Arg Asn  
1                      5                      10                      15  
Arg Gln Leu Leu Asn Gln Ala Asn Ile Arg Ser Tyr Phe Arg Phe Pro  
                         20                      25                      30  
Arg Asp Ala Asp Leu Cys Lys Lys Trp Val Asp Phe Cys Asn Arg Pro  
                         35                      40                      45  
Glu Leu Tyr Lys Lys Tyr Asp Glu Asn Gly Pro Glu Tyr Leu Tyr Lys  
                         50                      55                      60  
Ser Ser Arg Ile Cys Ser Asp His Phe Gln Pro Ala Asp Phe Asn Asn  
65                      70                      75                      80  
Pro Asn Leu Phe Ser Gln Gly Leu Lys Lys Gly Ser Val Pro Ser Val  
                         85                      90                      95  
Asn Pro Ala Asn Leu Glu Ala Ala Lys Pro His  
                         100                      105

<210> 90  
<211> 104  
<212> PRT  
<213> Anopheles gambiae

<400> 90  
Met Thr Asn Cys Ser Cys Ala Val Ala Asp Cys Asn Asn Asn Arg Arg  
1                      5                      10                      15  
Asn Val Arg Lys Arg Met Leu Asp Ile Gly Phe His Thr Phe Pro Ser  
                         20                      25                      30  
Asp Pro Val Gln Arg Gln Arg Trp Val Lys Phe Cys Gln Arg Glu Pro  
                         35                      40                      45  
Ser Trp Gln Pro Lys Ser Cys Asp Ser Met Cys Ser Val His Phe Lys  
                         50                      55                      60  
Asp Thr Asp Tyr Gln Met Ser His Ser Pro Leu Ile Arg Leu Ala Thr  
65                      70                      75                      80  
Asn Leu Arg Arg Leu Lys Pro Asp Val Ile Pro Thr Ile Arg Lys Gly  
                         85                      90                      95  
Arg Ala Ile Pro Val Ala Ala Arg  
                         100

<210> 91  
<211> 95  
<212> PRT  
<213> Anopheles gambiae

<400> 91  
Met Gly Gly Cys Arg Cys Thr Phe Arg Asp Cys Glu Asn Gly Thr Ala  
1                      5                      10                      15

Ser Arg Lys Glu Leu His Tyr Phe Arg Tyr Pro Val Arg Asp Gln Glu  
20 25 30  
Arg Leu Ile Glu Trp Ala Lys Asn Ala Asp Arg Leu Glu Phe Val Asp  
35 40 45  
Leu Pro Val Asp Lys Val Ser Asn Lys Val Val Cys Gln Glu His Phe  
50 55 60  
Glu Arg Lys Met Phe Met Asn Asp Leu Arg Asp Arg Leu Thr Lys Met  
65 70 75 80  
Ala Ile Pro Arg Leu Met Val Met Pro Asp Glu Thr Ile Val Asn  
85 90 95

<210> 92

<211> 97

<212> PRT

<213> Anopheles gambiae

<400> 92

Met Lys Cys Phe Val Ser Gly Cys Asp Thr Asp Asp Asn Val Val Ser  
1 5 10 15  
Tyr Thr Ser Val Phe Tyr Val Asn Cys Pro Thr Asp Pro Thr Ile Gln  
20 25 30  
Gln Gln Trp Phe Thr Leu Leu Glu Val Thr Asp Pro Asp Ala Met Arg  
35 40 45  
Ala Leu Val Asp Gly Arg Ser Lys Val Cys Ser Cys His Phe Thr Glu  
50 55 60  
Asp Cys Phe Gly His His Pro Val Tyr Gly Tyr Arg Tyr Leu Leu Ala  
65 70 75 80  
Thr Ala Leu Pro Thr Val Phe Pro Pro Arg Lys Glu Ile Glu Gln Pro  
85 90 95  
Lys

<210> 93

<211> 92

<212> PRT

<213> Bombyx mori

<400> 93

Met Pro Arg Cys Ser Val Ile Val Cys Lys Asn Asn Ser Cys Ile Val  
1 5 10 15  
Asn Tyr Lys Lys Asp Ser Ile Ser Phe His Thr Tyr Pro Lys Asp Pro  
20 25 30  
Lys Ile Lys Glu Met Trp Ile Asn Ala Thr Gly Arg Gly Pro Ser Trp  
35 40 45  
Phe Pro Thr Lys Asn His Thr Ile Cys Ser Ser His Phe Glu Pro Lys  
50 55 60  
Cys Phe Gln Pro Leu Lys Lys Val Arg Arg Leu Phe Glu Trp Ser Val  
65 70 75 80  
Pro Thr Leu Lys Leu Arg Met Val Leu Met Asn Tyr  
85 90

<210> 94

<211> 96

<212> PRT

<213> Bombyx mori

<400> 94

Met	Pro	Asp	Thr	His	Arg	Thr	Cys	Glu	Val	Cys	Gly	Ile	Lys	Glu	Arg
1				5					10					15	
His	Leu	Thr	Glu	Lys	Arg	Phe	Phe	Ala	Arg	Phe	Pro	Leu	Asp	Val	Asn
			20					25					30		
Arg	Cys	Lys	Gln	Trp	Val	Lys	Met	Val	Gly	Lys	Glu	Asp	Leu	Ala	Tyr
		35					40					45			
Leu	Gln	Val	His	Met	Leu	His	Asp	Leu	Lys	His	Val	Cys	Glu	Ala	His
	50					55					60				
Phe	Ser	Arg	Arg	Asp	Phe	Thr	Lys	Ser	Lys	Lys	Arg	Leu	Lys	Lys	Arg
65					70					75					80
Ala	Val	Pro	Lys	Leu	Asn	Leu	Thr	Leu	Pro	Pro	Leu	Arg	Asp	Glu	Ile
				85					90					95	

<210> 95

<211> 89

<212> PRT

<213> Caenorhabditis elegans

<400> 95

Met	Pro	Thr	Thr	Cys	Gly	Phe	Pro	Asn	Cys	Lys	Phe	Arg	Ser	Arg	Tyr
1				5					10					15	
Arg	Gly	Leu	Glu	Asp	Asn	Arg	His	Phe	Tyr	Arg	Ile	Pro	Lys	Arg	Pro
			20					25					30		
Leu	Ile	Leu	Arg	Gln	Arg	Trp	Leu	Thr	Ala	Ile	Gly	Arg	Thr	Glu	Glu
		35					40					45			
Thr	Val	Val	Ser	Gln	Leu	Arg	Ile	Cys	Ser	Ala	His	Phe	Glu	Gly	Gly
	50					55					60				
Glu	Lys	Lys	Glu	Gly	Asp	Ile	Pro	Val	Pro	Asp	Pro	Thr	Val	Asp	Lys
65					70					75					80
Gln	Ile	Lys	Ile	Glu	Leu	Pro	Pro	Lys							
				85											

<210> 96

<211> 100

<212> PRT

<213> Caenorhabditis elegans

<400> 96

Met	Tyr	Gly	Val	Gln	Ser	Glu	Cys	Val	Leu	Cys	Ala	His	Ala	Asn	Asp
1				5					10					15	
Cys	Thr	Ala	Met	Ile	Pro	Phe	Pro	Gly	Pro	Asp	Asp	Glu	Lys	Leu	Arg
			20					25					30		
Thr	Lys	Trp	Ile	Asn	Ser	Met	Cys	Arg	Glu	Pro	Trp	Ile	Tyr	Arg	Tyr
		35					40					45			
Leu	Ser	Thr	Arg	Leu	Glu	Lys	Pro	Gly	Arg	His	Tyr	Leu	Cys	Ala	Ser
	50					55					60				
His	Phe	Asn	Arg	Asn	Ser	Leu	Arg	Tyr	His	Ala	Gly	Leu	Gly	Leu	Trp
65					70					75					80
Arg	Arg	Ala	Ala	Ala	Cys	Pro	Val	Leu	Ala	Cys	Thr	Thr	Asp	Glu	Glu
				85					90					95	
Arg	Gln	Glu	Val												
			100												

<210> 97  
 <211> 86  
 <212> PRT  
 <213> *Caenorhabditis elegans*

<400> 97  
 Met Glu His Pro Leu Gln Cys Cys Tyr Cys Leu Glu Val Tyr Glu Lys  
 1 5 10 15  
 Arg Tyr Met Thr Gln Val Pro Lys Thr Glu Gln Arg Ile Ala Arg Trp  
 20 25 30  
 Val Ala Ile Leu Gly Glu Gln Phe Arg Ile Arg Leu Arg Met Lys Pro  
 35 40 45  
 Ala Asn Tyr Met Cys Arg Lys His Phe Pro Gln Ala Asp Phe Ser Ser  
 50 55 60  
 Arg Gly Arg Leu Leu Lys Thr Ala Val Pro Asn Val Val Ser Gln Glu  
 65 70 75 80  
 Lys Val Leu Ala Phe Lys  
 85

<210> 98  
 <211> 97  
 <212> PRT  
 <213> *Caenorhabditis elegans*

<400> 98  
 Asn Leu Thr His Lys Pro Cys Thr Val Cys Asn Arg Val Met Lys Ser  
 1 5 10 15  
 Gly Glu Met His Leu Asn Phe Pro Ala Asp Leu Asp Arg Arg Arg Ile  
 20 25 30  
 Trp Ala Asn Leu Leu Gly Phe Lys Tyr Lys Asp Ile Leu Arg Ser Lys  
 35 40 45  
 Met Gly Pro Val Ser Phe Ser Ile Ala Ala Gly Pro Ile Cys Thr Glu  
 50 55 60  
 His Phe Ala Glu Glu Cys Phe Arg Asn His Asn Phe Asn Lys Ser Ala  
 65 70 75 80  
 Ile Glu Ala Phe Gly Val Pro Val Ala Ile Ser Pro Asp Val Lys Thr  
 85 90 95  
 Thr

<210> 99  
 <211> 210  
 <212> PRT  
 <213> *Mus musculus*

<400> 99  
 Met Val Gln Ser Cys Ser Ala Tyr Gly Cys Lys Asn Arg Tyr Asp Lys  
 1 5 10 15  
 Asp Lys Pro Val Ser Phe His Lys Phe Pro Leu Thr Arg Pro Ser Leu  
 20 25 30  
 Cys Lys Gln Trp Glu Ala Ala Val Lys Arg Lys Asn Phe Lys Pro Thr  
 35 40 45  
 Lys Tyr Ser Ser Ile Cys Ser Glu His Phe Thr Pro Asp Cys Phe Lys



50		55		60
Arg Glu Cys Asn Asn Lys Leu Leu Lys Glu Asn Ala Val Pro Thr Ile				
65		70		75
Phe Leu Tyr Ile Glu Pro His Glu Lys Lys Glu Asp Leu Glu Ser Gln				80
	85		90	95
Glu Gln Leu Pro Ser Pro Ser Pro Pro Ala Ser Gln Val Asp Ala Ala				
	100		105	110
Ile Gly Leu Leu Met Pro Pro Leu Gln Thr Pro Asp Asn Leu Ser Val				
	115		120	125
Phe Cys Asp His Asn Tyr Thr Val Glu Asp Thr Met His Gln Arg Lys				
	130		135	140
Arg Ile Leu Gln Leu Glu Gln Gln Val Glu Lys Leu Arg Lys Lys Leu				
145		150		155
Lys Thr Ala Gln Gln Arg Cys Arg Arg Gln Glu Arg Gln Leu Glu Lys				160
	165		170	175
Leu Lys Glu Val Val His Phe Gln Arg Glu Lys Asp Asp Ala Ser Glu				
	180		185	190
Arg Gly Tyr Val Ile Leu Pro Asn Asp Tyr Phe Glu Ile Val Glu Val				
	195		200	205
Pro Ala				
210				

<210> 100

<211> 217

<212> PRT

<213> Mus musculus

<400> 100

Met Pro Thr Asn Cys Ala Ala Ala Gly Cys Ala Ala Thr Tyr Asn Lys				
1	5		10	15
His Ile Asn Ile Ser Phe His Arg Phe Pro Leu Asp Pro Lys Arg Arg				
	20		25	30
Lys Glu Trp Val Arg Leu Val Arg Arg Lys Asn Phe Val Pro Gly Lys				
	35		40	45
His Thr Phe Leu Cys Ser Lys His Phe Glu Ala Ser Cys Phe Asp Leu				
50		55		60
Thr Gly Gln Thr Arg Arg Leu Lys Met Asp Ala Val Pro Thr Ile Phe				
65		70		75
Asp Phe Cys Thr His Ile Lys Ser Leu Lys Leu Lys Ser Arg Asn Leu				80
	85		90	95
Leu Lys Thr Asn Asn Ser Phe Pro Pro Thr Gly Pro Cys Asn Leu Lys				
	100		105	110
Leu Asn Gly Ser Gln Gln Val Leu Leu Glu His Ser Tyr Ala Phe Arg				
	115		120	125
Asn Pro Met Glu Ala Lys Lys Arg Ile Ile Lys Leu Glu Lys Glu Ile				
	130		135	140
Ala Ser Leu Arg Lys Lys Met Lys Thr Cys Leu Gln Arg Glu Arg Arg				
145		150		155
Ala Thr Arg Arg Trp Ile Lys Ala Thr Cys Phe Val Lys Ser Leu Glu				
	165		170	175
Ala Ser Asn Met Leu Pro Lys Gly Ile Ser Glu Gln Ile Leu Pro Thr				
	180		185	190
Ala Leu Ser Asn Leu Pro Leu Glu Asp Leu Lys Ser Leu Glu Gln Asp				
	195		200	205
Gln Gln Asp Lys Thr Val Pro Ile Leu				
210		215		

<210> 101  
 <211> 218  
 <212> PRT  
 <213> Mus musculus

<400> 101  
 Met Pro Lys Ser Cys Ala Ala Arg Gln Cys Cys Asn Arg Tyr Ser Ser  
 1 5 10 15  
 Arg Arg Lys Gln Leu Thr Phe His Arg Phe Pro Phe Ser Arg Pro Glu  
 20 25 30  
 Leu Leu Arg Glu Trp Val Leu Asn Ile Gly Arg Ala Asp Phe Lys Pro  
 35 40 45  
 Lys Gln His Thr Val Ile Cys Ser Glu His Phe Arg Pro Glu Cys Phe  
 50 55 60  
 Ser Ala Phe Gly Asn Arg Lys Asn Leu Lys His Asn Ala Val Pro Thr  
 65 70 75 80  
 Val Phe Ala Phe Gln Asn Pro Thr Glu Val Cys Pro Glu Val Gly Ala  
 85 90 95  
 Gly Gly Asp Ser Ser Gly Arg Asn Met Asp Thr Thr Leu Glu Glu Leu  
 100 105 110  
 Gln Pro Pro Thr Pro Glu Gly Pro Val Gln Gln Val Leu Pro Asp Arg  
 115 120 125  
 Glu Ala Met Glu Ala Thr Glu Ala Ala Gly Leu Pro Ala Ser Pro Leu  
 130 135 140  
 Gly Leu Lys Arg Pro Leu Pro Gly Gln Pro Ser Asp His Ser Tyr Ala  
 145 150 155 160  
 Leu Ser Asp Leu Asp Thr Leu Lys Lys Lys Leu Phe Leu Thr Leu Lys  
 165 170 175  
 Glu Asn Lys Arg Leu Arg Lys Arg Leu Lys Ala Gln Arg Leu Leu Leu  
 180 185 190  
 Arg Arg Thr Cys Gly Arg Leu Arg Ala Tyr Arg Glu Gly Gln Pro Gly  
 195 200 205  
 Pro Arg Ala Arg Arg Pro Ala Gln Gly Ser  
 210 215

<210> 102  
 <211> 205  
 <212> PRT  
 <213> Mus musculus

<400> 102  
 Met Val Ile Cys Cys Ala Ala Val Asn Cys Ser Asn Arg Gln Gly Lys  
 1 5 10 15  
 Gly Glu Lys Arg Ala Val Ser Phe His Arg Phe Pro Leu Lys Asp Ser  
 20 25 30  
 Lys Arg Leu Ile Gln Trp Leu Lys Ala Val Gln Arg Asp Asn Trp Thr  
 35 40 45  
 Pro Thr Lys Tyr Ser Phe Leu Cys Ser Glu His Phe Thr Lys Asp Ser  
 50 55 60  
 Phe Ser Lys Arg Leu Glu Asp Gln His Arg Leu Leu Lys Pro Thr Ala  
 65 70 75 80  
 Val Pro Ser Ile Phe His Leu Ser Glu Lys Lys Arg Gly Ala Gly Gly  
 85 90 95  
 His Gly His Ala Arg Arg Lys Thr Thr Ala Ala Met Arg Gly His Thr



Asn Pro Arg Arg Gly Leu Trp Leu Ala Asn Cys Gln Arg Leu Asp Pro  
 35 40 45  
 Ser Gly Gln Gly Leu Trp Asp Pro Thr Ser Glu Tyr Ile Tyr Phe Cys  
 50 55 60  
 Ser Lys His Phe Glu Glu Asn Cys Phe Glu Leu Val Gly Ile Ser Gly  
 65 70 75 80  
 Tyr His Arg Leu Lys Glu Gly Ala Val Pro Thr Ile Phe Glu Ser Phe  
 85 90 95  
 Ser Lys Leu Arg Arg Thr Ala Lys Thr Lys Gly His Gly Tyr Pro Pro  
 100 105 110  
 Gly Leu Pro Asp Val Ser Arg Leu Arg Arg Cys Arg Lys Arg Cys Ser  
 115 120 125  
 Glu Arg Gln Gly Pro Thr Thr Pro Phe Ser Pro Pro Pro Arg Ala Asp  
 130 135 140  
 Ile Ile Cys Phe Pro Val Glu Glu Ala Ser Ala Pro Ala Thr Leu Pro  
 145 150 155 160  
 Ala Ser Pro Ala Val Arg Leu Asp Pro Gly Leu Asn Ser Pro Phe Ser  
 165 170 175  
 Asp Leu Leu Gly Pro Leu Gly Ala Gln Ala Asp Glu Ala Gly Cys Ser  
 180 185 190  
 Thr Gln

<210> 105  
 <211> 305  
 <212> PRT  
 <213> Mus musculus

<400> 105  
 Met Pro Gly Phe Thr Cys Cys Val Pro Gly Cys Tyr Asn Asn Ser His  
 1 5 10 15  
 Arg Asp Lys Ala Leu His Phe Tyr Thr Phe Pro Lys Asp Ala Glu Leu  
 20 25 30  
 Arg Arg Leu Trp Leu Lys Asn Val Ser Arg Ala Gly Val Ser Gly Cys  
 35 40 45  
 Phe Ser Thr Phe Gln Pro Thr Thr Gly His Arg Leu Cys Ser Val His  
 50 55 60  
 Phe Gln Gly Gly Arg Lys Thr Tyr Thr Val Arg Val Pro Thr Ile Phe  
 65 70 75 80  
 Pro Leu Arg Gly Val Asn Glu Arg Lys Val Ala Arg Arg Pro Ala Gly  
 85 90 95  
 Ala Ala Ala Ala Arg Arg Arg Gln Gln Gln Gln Gln Gln Gln Gln  
 100 105 110  
 Gln Gln Gln Gln Gln Gln Leu Gln Gln Gln Gln Pro Ser Pro Ser Ser  
 115 120 125  
 Ser Thr Ala Gln Thr Thr Gln Leu Gln Pro Asn Leu Val Ser Ala Ser  
 130 135 140  
 Ala Ala Val Leu Leu Thr Leu Gln Ala Ala Val Asp Ser Asn Gln Ala  
 145 150 155 160  
 Pro Gly Ser Val Val Pro Val Ser Thr Thr Pro Ser Gly Asp Asp Val  
 165 170 175  
 Lys Pro Ile Asp Leu Thr Val Gln Val Glu Phe Ala Ala Ala Glu Gly  
 180 185 190  
 Ala Ala Ala Ala Ala Ala Ser Glu Leu Glu Ala Ala Thr Ala Gly  
 195 200 205  
 Leu Glu Ala Ala Glu Cys Thr Leu Gly Pro Gln Leu Val Val Val Gly

210		215		220											
Glu	Glu	Gly	Phe	Pro	Asp	Thr	Gly	Ser	Asp	His	Ser	Tyr	Ser	Leu	Ser
225					230					235					240
Ser	Gly	Thr	Thr	Glu	Glu	Glu	Leu	Leu	Arg	Lys	Leu	Asn	Glu	Gln	Arg
				245					250					255	
Asp	Ile	Leu	Ala	Leu	Met	Glu	Val	Lys	Met	Lys	Glu	Met	Lys	Gly	Ser
			260					265					270		
Ile	Arg	His	Leu	Arg	Leu	Thr	Glu	Ala	Lys	Leu	Arg	Glu	Glu	Leu	Arg
	275						280					285			
Glu	Lys	Asp	Arg	Leu	Leu	Ala	Met	Ala	Val	Ile	Arg	Lys	Lys	His	Gly
290						295					300				
Met															
305															

<210> 106  
 <211> 305  
 <212> PRT  
 <213> Mus musculus

<400> 106
Met Pro Gly Phe Thr Cys Cys Val Pro Gly Cys Tyr Asn Asn Ser His
1 5 10 15
Arg Asp Lys Ala Leu His Phe Tyr Thr Phe Pro Lys Asp Ala Glu Leu
20 25 30
Arg Arg Leu Trp Leu Lys Asn Val Ser Arg Ala Gly Val Ser Gly Cys
35 40 45
Phe Ser Thr Phe Gln Pro Thr Thr Gly His Arg Leu Cys Ser Val His
50 55 60
Phe Gln Gly Gly Arg Lys Thr Tyr Thr Val Arg Val Pro Thr Ile Phe
65 70 75 80
Pro Leu Arg Gly Val Asn Glu Arg Lys Val Ala Arg Arg Pro Ala Gly
85 90 95
Ala Ala Ala Ala Arg Arg Arg Gln Gln Gln Gln Gln Gln Gln Gln
100 105 110
Gln Gln Gln Gln Gln Gln Leu Gln Gln Gln Gln Pro Ser Pro Ser Ser
115 120 125
Ser Thr Ala Gln Thr Thr Gln Leu Gln Pro Asn Leu Val Ser Ala Ser
130 135 140
Ala Ala Val Leu Leu Thr Leu Gln Ala Ala Val Asp Ser Asn Gln Ala
145 150 155 160
Pro Gly Ser Val Val Pro Val Ser Thr Thr Pro Ser Gly Asp Asp Val
165 170 175
Lys Pro Ile Asp Leu Thr Val Gln Val Glu Phe Ala Ala Ala Glu Gly
180 185 190
Ala Ala Ala Ala Ala Ala Ala Ser Glu Leu Glu Ala Ala Thr Ala Gly
195 200 205
Leu Glu Ala Ala Glu Cys Thr Leu Gly Pro Gln Leu Val Val Val Gly
210 215 220
Glu Glu Gly Phe Pro Asp Thr Gly Ser Asp His Ser Tyr Ser Leu Ser
225 230 235 240
Ser Gly Thr Thr Glu Glu Glu Leu Leu Arg Lys Leu Asn Glu Gln Arg
245 250 255
Asp Ile Leu Ala Leu Met Glu Val Lys Met Lys Glu Met Lys Gly Ser
260 265 270
Ile Arg His Leu Arg Leu Thr Glu Ala Lys Leu Arg Glu Leu Arg
275 280 285

Glu Lys Asp Arg Leu Leu Ala Met Ala Val Ile Arg Lys Lys His Gly  
 290 295 300  
 Met  
 305

<210> 107  
 <211> 652  
 <212> PRT  
 <213> Mus musculus

<400> 107  
 Met Pro Asn Phe Cys Ala Ala Pro Asn Cys Thr Arg Lys Ser Thr Gln  
 1 5 10 15  
 Ser Asp Leu Ala Phe Phe Arg Phe Pro Arg Asp Pro Ala Arg Cys Gln  
 20 25 30  
 Lys Trp Val Glu Asn Cys Arg Arg Ala Asp Leu Glu Asp Lys Thr Pro  
 35 40 45  
 Asp Gln Leu Asn Lys His Tyr Arg Leu Cys Ala Lys His Phe Glu Thr  
 50 55 60  
 Ser Met Ile Cys Arg Thr Ser Pro Tyr Arg Thr Val Leu Arg Asp Asn  
 65 70 75 80  
 Ala Ile Pro Thr Ile Phe Asp Leu Thr Ser His Leu Asn Asn Pro His  
 85 90 95  
 Ser Arg His Arg Lys Arg Ile Lys Glu Leu Ser Glu Asp Glu Ile Arg  
 100 105 110  
 Thr Leu Lys Gln Lys Lys Ile Glu Thr Ser Glu Gln Glu Glu  
 115 120 125  
 Thr Asn Thr Asn Ala Gln Asn Pro Ser Ala Glu Ala Val Asn Gln Gln  
 130 135 140  
 Asp Ala Asn Val Leu Pro Leu Thr Leu Glu Glu Lys Glu Asn Lys Glu  
 145 150 155 160  
 Tyr Leu Lys Ser Leu Phe Glu Ile Leu Val Leu Met Gly Lys Gln Asn  
 165 170 175  
 Ile Pro Leu Asp Gly His Glu Ala Asp Glu Val Pro Glu Gly Leu Phe  
 180 185 190  
 Ala Pro Asp Asn Phe Gln Ala Leu Leu Glu Cys Arg Ile Asn Ser Gly  
 195 200 205  
 Glu Glu Val Leu Arg Lys Arg Phe Glu Ala Thr Ala Val Asn Thr Leu  
 210 215 220  
 Phe Cys Ser Lys Thr Gln Arg His Met Leu Glu Ile Cys Glu Ser  
 225 230 235 240  
 Cys Ile Arg Glu Glu Thr Leu Arg Glu Val Arg Asp Ser His Phe Phe  
 245 250 255  
 Ser Ile Ile Thr Asp Asp Val Val Asp Ile Ala Gly Glu Glu His Leu  
 260 265 270  
 Pro Val Leu Val Arg Phe Val Asp Asp Ala His Asn Leu Arg Glu Glu  
 275 280 285  
 Phe Val Gly Phe Leu Pro Tyr Glu Ala Asp Ala Glu Ile Leu Ala Val  
 290 295 300  
 Lys Phe His Thr Thr Ile Thr Glu Lys Trp Gly Leu Asn Met Glu Tyr  
 305 310 315 320  
 Cys Arg Gly Gln Ala Tyr Ile Val Ser Ser Gly Phe Ser Ser Lys Met  
 325 330 335  
 Lys Val Val Ala Ser Arg Leu Leu Glu Lys Tyr Pro Gln Ala Val Tyr  
 340 345 350  
 Thr Leu Cys Ser Ser Cys Ala Leu Asn Ala Trp Leu Ala Lys Ser Val

355	360	365
Pro Val Ile Gly Val Ser Val Ala Leu Gly Thr Ile Glu Glu Val Cys		
370	375	380
Ser Phe Phe His Arg Ser Pro Gln Leu Leu Leu Glu Leu Asp Ser Val		
385	390	395
Ile Ser Val Leu Phe Gln Asn Ser Glu Glu Arg Ala Lys Glu Leu Lys		400
	405	410
Glu Ile Cys His Ser Gln Trp Thr Gly Arg His Asp Ala Phe Glu Ile		415
	420	425
Leu Val Asp Leu Leu Gln Ala Leu Val Leu Cys Leu Asp Gly Ile Ile		430
	435	440
Asn Ser Asp Thr Asn Val Arg Trp Asn Asn Tyr Ile Ala Gly Arg Ala		445
	450	455
Phe Val Leu Cys Ser Ala Val Thr Asp Phe Asp Phe Ile Val Thr Ile		460
465	470	475
Val Val Leu Lys Asn Val Leu Ser Phe Thr Arg Ala Phe Gly Lys Asn		480
	485	490
Leu Gln Gly Gln Thr Ser Asp Val Phe Phe Ala Ala Ser Ser Leu Thr		495
	500	505
Ala Val Leu His Ser Leu Asn Glu Val Met Glu Asn Ile Glu Val Tyr		510
	515	520
His Glu Phe Trp Phe Glu Glu Ala Thr Asn Leu Ala Thr Lys Leu Asp		525
	530	535
Ile Gln Met Lys Leu Pro Gly Lys Phe Arg Arg Ala Gln Gln Gly Asn		540
545	550	555
Leu Glu Ser Gln Leu Thr Ser Glu Ser Tyr Tyr Lys Asp Thr Leu Ser		560
	565	570
Val Pro Thr Val Glu His Ile Ile Gln Glu Leu Lys Asp Ile Phe Ser		575
	580	585
Glu Gln His Leu Lys Ala Leu Lys Cys Leu Ser Leu Val Pro Ser Val		590
	595	600
Met Gly Gln Leu Lys Phe Asn Thr Ser Glu Glu His His Ala Asp Met		605
	610	615
Tyr Arg Ser Asp Leu Pro Asn Pro Asp Thr Leu Ser Ala Glu Leu His		620
625	630	635
Cys Trp Arg Ile Lys Trp Lys His Arg Gly Lys Asp		640
	645	650

<210> 108

<211> 180

<212> PRT

<213> Rattus norvegicus

<220>

<223> RAT THAP

<221> UNSURE

<222> 95

<223> Xaa = any of the twenty amino acids

<400> 108

Arg Gln Cys Cys Asn Arg Tyr Ser Ser Arg Arg Lys Gln Leu Thr Phe		
1	5	10
His Arg Phe Pro Phe Ser Arg Pro Glu Leu Leu Arg Glu Trp Val Leu		15
	20	25
Asn Ile Gly Arg Ala Asp Phe Lys Pro Lys Gln His Thr Val Ile Cys		30





Tyr His Arg Leu Lys Glu Gly Ala Val Pro Thr Ile Phe Glu Ser Phe  
                   85                  90                  95  
 Ser Lys Leu Arg Arg Thr Ala Lys Thr Lys Val His Gly Tyr Pro Pro  
                   100                  105                  110  
 Gly Leu Pro Asp Val Ser Arg Leu Arg Arg Cys Arg Lys Arg Cys Ser  
                   115                  120                  125  
 Glu Arg Gln Gly Pro Thr Ile Pro Phe Ser Pro Pro Pro Arg Ala Asp  
                   130                  135                  140  
 Ile Ile Arg Phe Pro Val Glu Glu Ala Ser Ala Pro Ala Thr Leu Pro  
 145                  150                  155                  160  
 Ala Ser Pro Ala Ala Arg Leu Asp Pro Gly Leu Asn Ser Pro Phe Ser  
                   165                  170                  175  
 Asp Leu Leu Gly Pro Leu Gly Ala Gln Ala Asp Glu Ala Gly Cys Ser  
                   180                  185                  190  
 Ala Gln Pro Ser Pro Glu Gln His Pro Ser Pro Leu Glu Pro Gln His  
                   195                  200                  205  
 Val Ser Pro Ser Thr Tyr Met Leu Arg Leu Pro Pro Pro Ala Gly Ala  
                   210                  215                  220  
 Tyr Ile Gln Asn Glu His Ser Tyr Gln Val Gly Ser Ala Leu Leu Trp  
 225                  230                  235                  240  
 Lys Arg Arg Ala Glu Ala Ala Leu Asp Ala Leu Asp Lys Thr Gln Arg  
                   245                  250                  255  
 Gln Leu Gln Ala Cys Lys Arg Arg Glu Gln Arg Leu Arg Leu Arg Leu  
                   260                  265                  270  
 Thr Lys Leu Gln Gln Glu Arg Ala Arg Glu Lys Arg Ala Gln Ala Asp  
                   275                  280                  285  
 Ala Arg Gln Thr Leu Lys Asp His Val Gln Asp Phe Ala Met Gln Leu  
                   290                  295                  300  
 Ser Ser Ser Met Ala  
 305

<210> 111  
 <211> 142  
 <212> PRT  
 <213> Rattus norvegicus

<400> 111  
 Met Pro Asn Phe Cys Ala Ala Pro Asn Cys Thr Arg Lys Ser Thr Gln  
 1                  5                  10                  15  
 Ser Asp Leu Ala Phe Phe Arg Phe Pro Arg Asp Pro Ala Arg Cys Gln  
                   20                  25                  30  
 Lys Trp Val Glu Asn Cys Arg Arg Ala Asp Leu Glu Asp Lys Thr Pro  
                   35                  40                  45  
 Asp Gln Leu Asn Lys His Tyr Arg Leu Cys Ala Lys His Phe Glu Thr  
                   50                  55                  60  
 Ser Met Ile Cys Arg Thr Ser Pro Tyr Arg Thr Val Leu Arg Asp Asn  
 65                  70                  75                  80  
 Ala Ile Pro Thr Ile Phe Asp Leu Thr Ser His Leu Asn Asn Pro His  
                   85                  90                  95  
 Ser Arg His Arg Lys Arg Ile Lys Glu Leu Ser Glu Asp Glu Ile Arg  
                   100                  105                  110  
 Thr Leu Lys Gln Lys Lys Ile Glu Glu Thr Ser Glu Gln Glu Gln Gly  
                   115                  120                  125  
 Thr Asn Ser Asn Ala Gln Tyr Pro Ser Ala Glu Val Gly Asn  
                   130                  135                  140

<210> 112  
 <211> 104  
 <212> PRT  
 <213> Sus scrofa

<400> 112  
 Met Val Lys Cys Cys Ser Ala Ile Gly Cys Ala Ser Arg Cys Leu Pro  
 1 5 10 15  
 Asn Ser Lys Leu Lys Gly Leu Thr Phe His Val Phe Pro Thr Asp Glu  
 20 25 30  
 Lys Val Lys Arg Lys Trp Val Leu Ala Met Lys Arg Leu Asp Val Asn  
 35 40 45  
 Ala Ala Gly Met Trp Glu Pro Lys Lys Gly Asp Val Leu Cys Ser Arg  
 50 55 60  
 His Phe Lys Lys Thr Asp Phe Asp Arg Thr Thr Pro Asn Ile Lys Leu  
 65 70 75 80  
 Lys Pro Gly Val Ile Pro Ser Ile Phe Asp Ser Pro Ser His Leu Thr  
 85 90 95  
 Gly Glu Glu Arg Lys Ala Pro Leu  
 100

<210> 113  
 <211> 235  
 <212> PRT  
 <213> Sus scrofa

<220>  
 <221> UNSURE  
 <222> 57, 124, 192  
 <223> Xaa = any of the twenty amino acids

<400> 113  
 Met Pro Arg His Cys Ser Ala Ala Gly Cys Cys Thr Arg Asp Thr Arg  
 1 5 10 15  
 Glu Thr Arg Asn Arg Gly Ile Ser Phe His Arg Leu Pro Lys Lys Asp  
 20 25 30  
 Asn Pro Arg Arg Gly Leu Trp Leu Ala Asn Cys Gln Arg Leu Asp Pro  
 35 40 45  
 Ser Gly Gln Gly Leu Trp Asp Pro Xaa Ser Glu Tyr Ile Tyr Phe Cys  
 50 55 60  
 Ser Lys His Phe Glu Glu Asn Cys Phe Glu Leu Val Gly Ile Ser Gly  
 65 70 75 80  
 Tyr His Arg Leu Lys Glu Gly Ala Val Pro Thr Ile Phe Glu Ser Phe  
 85 90 95  
 Ser Lys Leu Arg Arg Thr Ala Lys Thr Lys Gly His Ser Tyr Pro Pro  
 100 105 110  
 Gly Pro Pro Asp Val Ser Arg Leu Arg Arg Cys Xaa Lys Arg Cys Ser  
 115 120 125  
 Glu Gly Arg Gly Pro Thr Thr Pro Phe Ser Pro Pro Pro Pro Ala Asp  
 130 135 140  
 Val Thr Cys Phe Pro Val Glu Glu Ala Ser Ala Pro Ala Ala Leu Ser  
 145 150 155 160  
 Ala Ser Pro Thr Gly Arg Leu Glu Pro Gly Leu Ser Ser Pro Phe Ser  
 165 170 175  
 Asp Leu Leu Gly Pro Leu Gly Ala Gln Ala Asp Glu Ala Gly Cys Xaa

		180						185				190					
Thr	Gln	Pro	Ser	Pro	Glu	Arg	Glu	Pro	Glu	Arg	Gln	Pro	Ser	Pro	Leu		
		195						200				205					
Glu	Pro	Arg	Pro	Val	Ser	Pro	Ser	Ala	Tyr	Met	Leu	Arg	Leu	Pro	Pro		
	210					215					220						
Pro	Ala	Gly	Ala	Tyr	Ile	Gln	Asn	Glu	His	Ser							
225					230					235							

<210> 114  
 <211> 149  
 <212> PRT  
 <213> Sus scrofa

<400> 114

Met	Thr	Arg	Ser	Cys	Ser	Ala	Val	Gly	Cys	Ser	Thr	Arg	Asp	Thr	Val		
1				5					10					15			
Leu	Ser	Arg	Glu	Arg	Gly	Leu	Ser	Phe	His	Gln	Phe	Pro	Thr	Asp	Thr		
		20						25					30				
Ile	Gln	Arg	Ser	Gln	Trp	Ile	Arg	Ala	Val	Asn	Arg	Met	Asp	Pro	Arg		
	35					40						45					
Ser	Lys	Lys	Ile	Trp	Ile	Pro	Gly	Pro	Gly	Ala	Met	Leu	Cys	Ser	Lys		
	50					55					60						
His	Phe	Gln	Glu	Ser	Asp	Phe	Glu	Ser	Tyr	Gly	Ile	Arg	Arg	Lys	Leu		
65					70					75					80		
Lys	Lys	Gly	Ala	Val	Pro	Ser	Val	Ser	Leu	Tyr	Lys	Val	Leu	Gln	Gly		
			85						90					95			
Ala	His	Leu	Lys	Gly	Lys	Ala	Arg	Gln	Lys	Ile	Leu	Lys	Gln	Pro	Leu		
		100						105					110				
Pro	Asp	Asn	Ser	Gln	Glu	Val	Ala	Thr	Glu	Asp	His	Asn	Tyr	Ser	Leu		
	115						120					125					
Lys	Gly	Pro	Leu	Thr	Ile	Gly	Ala	Glu	Lys	Leu	Ala	Glu	Val	Gln	Gln		
	130					135					140						
Met	Leu	Gln	Val	Ser													
145																	

<210> 115  
 <211> 43  
 <212> PRT  
 <213> Mus musculus

<400> 115

Val	Leu	Glu	Asp	Val	Ala	Ala	Ala	Glu	Gln	Gly	Leu	Arg	Glu	Leu	Gln		
1				5					10					15			
Arg	Gly	Arg	Arg	Gln	Cys	Arg	Glu	Arg	Val	Cys	Ala	Leu	Arg	Ala	Ala		
		20						25					30				
Ala	Glu	Gln	Arg	Glu	Ala	Arg	Cys	Arg	Asp	Gly							
	35						40										

<210> 116  
 <211> 45  
 <212> PRT  
 <213> Mus musculus

<400> 116

Gln Leu Glu Gln Gln Val Glu Lys Leu Arg Lys Lys Leu Lys Thr Ala  
 1 5 10 15  
 Gln Gln Arg Cys Arg Arg Gln Glu Arg Gln Leu Glu Lys Leu Lys Glu  
 20 25 30  
 Val Val His Phe Gln Arg Glu Lys Asp Asp Ala Ser Glu  
 35 40 45

<210> 117  
 <211> 45  
 <212> PRT  
 <213> Homo sapiens

<400> 117  
 Gln Leu Glu Gln Gln Val Glu Lys Leu Arg Lys Lys Leu Lys Thr Ala  
 1 5 10 15  
 Gln Gln Arg Cys Arg Arg Gln Glu Arg Gln Leu Glu Lys Leu Lys Glu  
 20 25 30  
 Val Val His Phe Gln Lys Glu Lys Asp Asp Val Ser Glu  
 35 40 45

<210> 118  
 <211> 342  
 <212> PRT  
 <213> Homo sapiens

<400> 118  
 Met Ala Thr Gly Gly Tyr Arg Thr Ser Ser Gly Leu Gly Gly Ser Thr  
 1 5 10 15  
 Thr Asp Phe Leu Glu Glu Trp Lys Ala Lys Arg Glu Lys Met Arg Ala  
 20 25 30  
 Lys Gln Asn Pro Pro Gly Pro Ala Pro Pro Gly Gly Gly Ser Ser Asp  
 35 40 45  
 Ala Ala Gly Lys Pro Pro Ala Gly Ala Leu Gly Thr Pro Ala Ala Ala  
 50 55 60  
 Ala Ala Asn Glu Leu Asn Asn Asn Leu Pro Gly Gly Ala Pro Ala Ala  
 65 70 75 80  
 Pro Ala Val Pro Gly Pro Gly Gly Val Asn Cys Ala Val Gly Ser Ala  
 85 90 95  
 Met Leu Thr Arg Ala Pro Pro Ala Arg Gly Pro Arg Arg Ser Glu Asp  
 100 105 110  
 Glu Pro Pro Ala Ala Ser Ala Ser Ala Ala Pro Pro Pro Gln Arg Asp  
 115 120 125  
 Glu Glu Glu Pro Asp Gly Val Pro Glu Lys Gly Lys Ser Ser Gly Pro  
 130 135 140  
 Ser Ala Arg Lys Gly Lys Gly Gln Ile Glu Lys Arg Lys Leu Arg Glu  
 145 150 155 160  
 Lys Arg Arg Ser Thr Gly Val Val Asn Ile Pro Ala Ala Glu Cys Leu  
 165 170 175  
 Asp Glu Tyr Glu Asp Asp Glu Ala Gly Gln Lys Glu Arg Lys Arg Glu  
 180 185 190  
 Asp Ala Ile Thr Gln Gln Asn Thr Ile Gln Asn Glu Ala Val Asn Leu  
 195 200 205  
 Leu Asp Pro Gly Ser Ser Tyr Leu Leu Gln Glu Pro Pro Arg Thr Val  
 210 215 220  
 Ser Gly Arg Tyr Lys Ser Thr Thr Ser Val Ser Glu Glu Asp Val Ser

225                      230                      235                      240  
 Ser Arg Tyr Ser Arg Thr Asp Arg Ser Gly Phe Pro Arg Tyr Asn Arg  
                                  245                      250                      255  
 Asp Ala Asn Val Ser Gly Thr Leu Val Ser Ser Ser Thr Leu Glu Lys  
                                  260                      265                      270  
 Lys Ile Glu Asp Leu Glu Lys Glu Val Val Thr Glu Arg Gln Glu Asn  
                                  275                      280                      285  
 Leu Arg Leu Val Arg Leu Met Gln Asp Lys Glu Glu Met Ile Gly Lys  
                                  290                      295                      300  
 Leu Lys Glu Glu Ile Asp Leu Leu Asn Arg Asp Leu Asp Asp Ile Glu  
 305                                   310                      315                      320  
 Asp Glu Asn Glu Gln Leu Lys Gln Glu Asn Lys Thr Leu Leu Lys Val  
                                  325                      330                      335  
 Val Gly Gln Leu Thr Arg  
                                  340

<210> 119  
 <211> 134  
 <212> PRT  
 <213> Homo sapiens

<400> 119  
 Met Ala Gln Ser Leu Ala Leu Ser Leu Leu Ile Leu Val Leu Ala Phe  
 1                                      5                                      10                                      15  
 Gly Ile Pro Arg Thr Gln Gly Ser Asp Gly Gly Ala Gln Asp Cys Cys  
                                  20                                      25                                      30  
 Leu Lys Tyr Ser Gln Arg Lys Ile Pro Ala Lys Val Val Arg Ser Tyr  
                                  35                                      40                                      45  
 Arg Lys Gln Glu Pro Ser Leu Gly Cys Ser Ile Pro Ala Ile Leu Phe  
                                  50                                      55                                      60  
 Leu Pro Arg Lys Arg Ser Gln Ala Glu Leu Cys Ala Asp Pro Lys Glu  
 65                                      70                                      75                                      80  
 Leu Trp Val Gln Gln Leu Met Gln His Leu Asp Lys Thr Pro Ser Pro  
                                  85                                      90                                      95  
 Gln Lys Pro Ala Gln Gly Cys Arg Lys Asp Arg Gly Ala Ser Lys Thr  
                                  100                                      105                                      110  
 Gly Lys Lys Gly Lys Gly Ser Lys Gly Cys Lys Arg Thr Glu Arg Ser  
                                  115                                      120                                      125  
 Gln Thr Pro Lys Gly Pro  
                                  130

<210> 120  
 <211> 766  
 <212> PRT  
 <213> Drosophila melanogaster

<400> 120  
 Met Lys Tyr Cys Lys Phe Cys Cys Lys Ala Val Thr Gly Val Lys Leu  
 1                                      5                                      10                                      15  
 Ile His Val Pro Lys Cys Ala Ile Lys Arg Lys Leu Trp Glu Gln Ser  
                                  20                                      25                                      30  
 Leu Gly Cys Ser Leu Gly Glu Asn Ser Gln Ile Cys Asp Thr His Phe  
                                  35                                      40                                      45  
 Asn Asp Ser Gln Trp Lys Ala Ala Pro Ala Lys Gly Gln Thr Phe Lys  
                                  50                                      55                                      60

Arg	Arg	Arg	Leu	Asn	Ala	Asp	Ala	Val	Pro	Ser	Lys	Val	Ile	Glu	Pro
65				70					75						80
Glu	Pro	Glu	Lys	Ile	Lys	Glu	Gly	Tyr	Thr	Ser	Gly	Ser	Thr	Gln	Thr
			85						90					95	
Glu	Ser	Cys	Ser	Leu	Phe	Asn	Glu	Asn	Lys	Ser	Leu	Arg	Glu	Lys	Ile
			100					105					110		
Arg	Thr	Leu	Glu	Tyr	Glu	Met	Arg	Arg	Leu	Glu	Gln	Gln	Leu	Arg	Glu
		115					120					125			
Ser	Gln	Gln	Leu	Glu	Glu	Ser	Leu	Arg	Lys	Ile	Phe	Thr	Asp	Thr	Gln
	130					135					140				
Ile	Arg	Ile	Leu	Lys	Asn	Gly	Gly	Gln	Arg	Ala	Thr	Phe	Asn	Ser	Asp
145				150						155					160
Asp	Ile	Ser	Thr	Ala	Ile	Cys	Leu	His	Thr	Ala	Gly	Pro	Arg	Ala	Tyr
			165						170					175	
Asn	His	Leu	Tyr	Lys	Lys	Gly	Phe	Pro	Leu	Pro	Ser	Arg	Thr	Thr	Leu
		180						185					190		
Tyr	Arg	Trp	Leu	Ser	Asp	Val	Asp	Ile	Lys	Arg	Gly	Cys	Leu	Asp	Val
		195					200					205			
Val	Ile	Asp	Leu	Met	Asp	Ser	Asp	Gly	Val	Asp	Asp	Ala	Asp	Lys	Leu
	210				215						220				
Cys	Val	Leu	Ala	Phe	Asp	Glu	Met	Lys	Val	Ala	Ala	Ala	Phe	Glu	Tyr
225				230						235					240
Asp	Ser	Ser	Ala	Asp	Ile	Val	Tyr	Glu	Pro	Ser	Asp	Tyr	Val	Gln	Leu
			245						250					255	
Ala	Ile	Val	Arg	Gly	Leu	Lys	Lys	Ser	Trp	Lys	Gln	Pro	Val	Phe	Phe
		260						265					270		
Asp	Phe	Asn	Thr	Arg	Met	Asp	Pro	Asp	Thr	Leu	Asn	Asn	Ile	Leu	Arg
		275					280					285			
Lys	Leu	His	Arg	Lys	Gly	Tyr	Leu	Val	Val	Ala	Ile	Val	Ser	Asp	Leu
	290				295						300				
Gly	Thr	Gly	Asn	Gln	Lys	Leu	Trp	Thr	Glu	Leu	Gly	Ile	Ser	Glu	Ser
305			310						315						320
Lys	Thr	Trp	Phe	Ser	His	Pro	Ala	Asp	Asp	His	Leu	Lys	Ile	Phe	Val
			325						330					335	
Phe	Ser	Asp	Thr	Pro	His	Leu	Ile	Lys	Leu	Val	Arg	Asn	His	Tyr	Val
		340						345					350		
Asp	Ser	Gly	Leu	Thr	Ile	Asn	Gly	Lys	Lys	Leu	Thr	Lys	Lys	Thr	Ile
		355					360					365			
Gln	Glu	Ala	Leu	His	Leu	Cys	Asn	Lys	Ser	Asp	Leu	Ser	Ile	Leu	Phe
	370				375						380				
Lys	Ile	Asn	Glu	Asn	His	Ile	Asn	Val	Arg	Ser	Leu	Ala	Lys	Gln	Lys
385				390						395					400
Val	Lys	Leu	Ala	Thr	Gln	Leu	Phe	Ser	Asn	Thr	Thr	Ala	Ser	Ser	Ile
			405						410					415	
Arg	Arg	Cys	Tyr	Ser	Leu	Gly	Tyr	Asp	Ile	Glu	Asn	Ala	Thr	Glu	Thr
			420					425					430		
Ala	Asp	Phe	Phe	Lys	Leu	Met	Asn	Asp	Trp	Phe	Asp	Ile	Phe	Asn	Ser
		435					440					445			
Lys	Leu	Ser	Thr	Ser	Asn	Cys	Ile	Glu	Cys	Ser	Gln	Pro	Tyr	Gly	Lys
	450				455						460				
Gln	Leu	Asp	Ile	Gln	Asn	Asp	Ile	Leu	Asn	Arg	Met	Ser	Glu	Ile	Met
465				470					475						480
Arg	Thr	Gly	Ile	Leu	Asp	Lys	Pro	Lys	Arg	Leu	Pro	Phe	Gln	Lys	Gly
			485						490					495	
Ile	Ile	Val	Asn	Asn	Ala	Ser	Leu	Asp	Gly	Leu	Tyr	Lys	Tyr	Leu	Gln
		500						505					510		
Glu	Asn	Phe	Ser	Met	Gln	Tyr	Ile	Leu	Thr	Ser	Arg	Leu	Asn	Gln	Asp

515	520	525
Ile Val Glu His Phe Phe Gly Ser Met Arg Ser Arg Gly Gly Gln Phe		
530	535	540
Asp His Pro Thr Pro Leu Gln Phe Lys Tyr Arg Leu Arg Lys Tyr Ile		
545	550	555
Ile Ala Arg Asn Thr Glu Met Leu Arg Asn Ser Gly Asn Ile Glu Glu		
565	570	575
Gly Met Thr Asn Leu Lys Glu Cys Val Asn Lys Asn Val Ile Pro Asp		
580	585	590
Asn Ser Glu Ser Trp Leu Asn Leu Asp Phe Ser Ser Lys Glu Asn Glu		
595	600	605
Asn Lys Ser Lys Asp Asp Glu Pro Val Asp Asp Glu Pro Val Asp Glu		
610	615	620
Met Leu Ser Asn Ile Asp Phe Thr Glu Met Asp Glu Leu Thr Glu Asp		
625	630	635
Ala Met Glu Tyr Ile Ala Gly Tyr Val Ile Lys Lys Leu Arg Ile Ser		
645	650	655
Asp Lys Val Lys Glu Asn Leu Thr Phe Thr Tyr Val Asp Glu Val Ser		
660	665	670
His Gly Gly Leu Ile Lys Pro Ser Glu Lys Phe Gln Glu Lys Leu Lys		
675	680	685
Glu Leu Glu Cys Ile Phe Leu His Tyr Thr Asn Asn Asn Asn Phe Glu		
690	695	700
Ile Thr Asn Asn Val Lys Glu Lys Leu Ile Leu Ala Ala Arg Asn Val		
705	710	715
Asp Val Asp Lys Gln Val Lys Ser Phe Tyr Phe Lys Ile Arg Ile Tyr		
725	730	735
Phe Arg Ile Lys Tyr Phe Asn Lys Lys Ile Glu Ile Lys Asn Gln Lys		
740	745	750
Gln Lys Leu Ile Gly Asn Ser Lys Leu Leu Lys Ile Lys Leu		
755	760	765

<210> 121  
 <211> 103  
 <212> PRT  
 <213> Homo sapiens

<400> 121
Asp Glu Leu Cys Val Val Cys Gly Asp Lys Ala Thr Gly Tyr His Tyr
1 5 10 15
Arg Cys Ile Thr Cys Glu Gly Cys Lys Gly Phe Phe Arg Arg Thr Ile
20 25 30
Gln Lys Asn Leu His Pro Ser Tyr Ser Cys Lys Tyr Glu Gly Lys Cys
35 40 45
Val Ile Asp Lys Val Thr Arg Asn Gln Cys Gln Glu Cys Arg Phe Lys
50 55 60
Lys Cys Ile Tyr Val Gly Met Ala Thr Asp Leu Val Leu Asp Asp Ser
65 70 75 80
Lys Arg Leu Ala Lys Arg Lys Leu Ile Glu Glu Asn Arg Glu Lys Arg
85 90 95
Arg Arg Glu Glu Leu Glu Lys
100

<210> 122  
 <211> 81

<212> PRT

<213> Homo sapiens

<400> 122

```
Met Lys Pro Ala Arg Pro Cys Leu Val Cys Ser Asp Glu Ala Ser Gly
 1           5           10           15
Cys His Tyr Gly Val Leu Thr Cys Gly Ser Cys Lys Val Phe Phe Lys
      20           25           30
Arg Ala Val Glu Gly Gln His Asn Tyr Leu Cys Ala Gly Arg Asn Asp
      35           40           45
Cys Ile Ile Asp Lys Ile Arg Arg Lys Asn Cys Pro Ala Cys Arg Tyr
      50           55           60
Arg Lys Cys Leu Gln Ala Gly Met Asn Leu Glu Ala Arg Lys Thr Lys
65           70           75           80
Lys
```

<210> 123

<211> 89

<212> PRT

<213> Homo sapiens

<400> 123

```
Met Val Gln Ser Cys Ser Ala Tyr Gly Cys Lys Asn Arg Tyr Asp Lys
 1           5           10           15
Asp Lys Pro Val Ser Phe His Lys Phe Pro Leu Thr Arg Pro Ser Leu
      20           25           30
Cys Lys Glu Trp Glu Ala Ala Val Arg Arg Lys Asn Phe Lys Pro Thr
      35           40           45
Lys Tyr Ser Ser Ile Cys Ser Glu His Phe Thr Pro Asp Cys Phe Lys
      50           55           60
Arg Glu Cys Asn Asn Lys Leu Leu Lys Glu Asn Ala Val Pro Thr Ile
65           70           75           80
Phe Leu Cys Thr Glu Pro His Asp Lys
      85
```

<210> 124

<211> 85

<212> PRT

<213> Drosophila melanogaster

<400> 124

```
Met Lys Tyr Cys Lys Phe Cys Cys Lys Ala Val Thr Gly Val Lys Leu
 1           5           10           15
Ile His Val Pro Lys Cys Ala Ile Lys Arg Lys Leu Trp Glu Gln Ser
      20           25           30
Leu Gly Cys Ser Leu Gly Glu Asn Ser Gln Ile Cys Asp Thr His Phe
      35           40           45
Asn Asp Ser Gln Trp Lys Ala Ala Pro Ala Lys Gly Gln Thr Phe Lys
      50           55           60
Arg Arg Arg Leu Asn Ala Asp Ala Val Pro Ser Lys Val Ile Glu Pro
65           70           75           80
Glu Pro Glu Lys Ile
      85
```



<210> 125  
 <211> 58  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> THAP Domain consensus  
  
 <221> UNSURE  
 <222> 2-3, 7, 9, 13-17, 19, 21-23, 25-26, 28, 35, 38-39, 41, 45-50, 52, 55-56  
 <223> Xaa = any of the twenty amino acids

<400> 125  
 Met Val Xaa Xaa Cys Ser Xaa Tyr Xaa Cys Lys Asn Xaa Xaa Xaa Xaa  
 1 5 10 15  
 Xaa Lys Xaa Val Xaa Xaa Xaa Lys Xaa Xaa Leu Xaa Arg Pro Ser Leu  
 20 25 30  
 Cys Lys Xaa Trp Glu Xaa Xaa Val Xaa Arg Lys Asn Xaa Xaa Xaa Xaa  
 35 40 45  
 Xaa Xaa Ser Xaa Ile Cys Xaa Xaa His Phe  
 50 55

<210> 126  
 <211> 89  
 <212> PRT  
 <213> Homo sapiens

<400> 126  
 Met Val Gln Ser Cys Ser Ala Tyr Gly Cys Lys Asn Arg Tyr Asp Lys  
 1 5 10 15  
 Asp Lys Pro Val Ser Phe His Lys Phe Pro Leu Thr Arg Pro Ser Leu  
 20 25 30  
 Cys Lys Glu Trp Glu Ala Ala Val Arg Arg Lys Asn Phe Lys Pro Thr  
 35 40 45  
 Lys Tyr Ser Ser Ile Cys Ser Glu His Phe Thr Pro Asp Cys Phe Lys  
 50 55 60  
 Arg Glu Cys Asn Asn Lys Leu Leu Lys Glu Asn Ala Val Pro Thr Ile  
 65 70 75 80  
 Phe Leu Cys Thr Glu Pro His Asp Lys  
 85

<210> 127  
 <211> 89  
 <212> PRT  
 <213> Homo sapiens

<400> 127  
 Met Pro Lys Ser Cys Ala Ala Arg Gln Cys Cys Asn Arg Tyr Ser Ser  
 1 5 10 15  
 Arg Arg Lys Gln Leu Thr Phe His Arg Phe Pro Phe Ser Arg Pro Glu  
 20 25 30  
 Leu Leu Lys Glu Trp Val Leu Asn Ile Gly Arg Gly Asn Phe Lys Pro  
 35 40 45

Lys Gln His Thr Val Ile Cys Ser Glu His Phe Arg Pro Glu Cys Phe  
 50 55 60  
 Ser Ala Phe Gly Asn Arg Lys Asn Leu Lys His Asn Ala Val Pro Thr  
 65 70 75 80  
 Val Phe Ala Phe Gln Asp Pro Thr Gln  
 85

<210> 128  
 <211> 90  
 <212> PRT  
 <213> Homo sapiens

<400> 128  
 Met Pro Arg Tyr Cys Ala Ala Ile Cys Cys Lys Asn Arg Arg Gly Arg  
 1 5 10 15  
 Asn Asn Lys Asp Arg Lys Leu Ser Phe Tyr Pro Phe Pro Leu His Asp  
 20 25 30  
 Lys Glu Arg Leu Glu Lys Trp Leu Lys Asn Met Lys Arg Asp Ser Trp  
 35 40 45  
 Val Pro Ser Lys Tyr Gln Phe Leu Cys Ser Asp His Phe Thr Pro Asp  
 50 55 60  
 Ser Leu Asp Ile Arg Trp Gly Ile Arg Tyr Leu Lys Gln Thr Ala Val  
 65 70 75 80  
 Pro Thr Ile Phe Ser Leu Pro Glu Asp Asn  
 85 90

<210> 129  
 <211> 92  
 <212> PRT  
 <213> Homo sapiens

<400> 129  
 Met Pro Lys Tyr Cys Arg Ala Pro Asn Cys Ser Asn Thr Ala Gly Arg  
 1 5 10 15  
 Leu Gly Ala Asp Asn Arg Pro Val Ser Phe Tyr Lys Phe Pro Leu Lys  
 20 25 30  
 Asp Gly Pro Arg Leu Gln Ala Trp Leu Gln His Met Gly Cys Glu His  
 35 40 45  
 Trp Val Pro Ser Cys His Gln His Leu Cys Ser Glu His Phe Thr Pro  
 50 55 60  
 Ser Cys Phe Gln Trp Arg Trp Gly Val Arg Tyr Leu Arg Pro Asp Ala  
 65 70 75 80  
 Val Pro Ser Ile Phe Ser Arg Gly Pro Pro Ala Lys  
 85 90

<210> 130  
 <211> 90  
 <212> PRT  
 <213> Homo sapiens

<400> 130  
 Met Val Ile Cys Cys Ala Ala Val Asn Cys Ser Asn Arg Gln Gly Lys  
 1 5 10 15  
 Gly Glu Lys Arg Ala Val Ser Phe His Arg Phe Pro Leu Lys Asp Ser

	20						25				30				
Lys	Arg	Leu	Ile	Gln	Trp	Leu	Lys	Ala	Val	Gln	Arg	Asp	Asn	Trp	Thr
	35						40					45			
Pro	Thr	Lys	Tyr	Ser	Phe	Leu	Cys	Ser	Glu	His	Phe	Thr	Lys	Asp	Ser
	50					55					60				
Phe	Ser	Lys	Arg	Leu	Glu	Asp	Gln	His	Arg	Leu	Leu	Lys	Pro	Thr	Ala
65				70						75					80
Val	Pro	Ser	Ile	Phe	His	Leu	Thr	Glu	Lys						
			85						90						

<210> 131  
 <211> 89  
 <212> PRT  
 <213> Homo sapiens

<400> 131															
Met	Pro	Thr	Asn	Cys	Ala	Ala	Ala	Gly	Cys	Ala	Thr	Thr	Tyr	Asn	Lys
1				5					10					15	
His	Ile	Asn	Ile	Ser	Phe	His	Arg	Phe	Pro	Leu	Asp	Pro	Lys	Arg	Arg
		20						25					30		
Lys	Glu	Trp	Val	Arg	Leu	Val	Arg	Arg	Lys	Asn	Phe	Val	Pro	Gly	Lys
	35						40					45			
His	Thr	Phe	Leu	Cys	Ser	Lys	His	Phe	Glu	Ala	Ser	Cys	Phe	Asp	Leu
	50					55					60				
Thr	Gly	Gln	Thr	Arg	Arg	Leu	Lys	Met	Asp	Ala	Val	Pro	Thr	Ile	Phe
65				70					75						80
Asp	Phe	Cys	Thr	His	Ile	Lys	Ser	Met							
				85											

<210> 132  
 <211> 90  
 <212> PRT  
 <213> Homo sapiens

<400> 132															
Met	Pro	Asn	Phe	Cys	Ala	Ala	Pro	Asn	Cys	Thr	Arg	Lys	Ser	Thr	Gln
1				5					10					15	
Ser	Asp	Leu	Ala	Phe	Phe	Arg	Phe	Pro	Arg	Asp	Pro	Ala	Arg	Cys	Gln
		20						25					30		
Lys	Trp	Val	Glu	Asn	Cys	Arg	Arg	Ala	Asp	Leu	Glu	Asp	Lys	Thr	Pro
	35						40					45			
Asp	Gln	Leu	Asn	Lys	His	Tyr	Arg	Leu	Cys	Ala	Lys	His	Phe	Glu	Thr
	50					55					60				
Ser	Met	Ile	Cys	Arg	Thr	Ser	Pro	Tyr	Arg	Thr	Val	Leu	Arg	Asp	Asn
65				70					75						80
Ala	Ile	Pro	Thr	Ile	Phe	Asp	Leu	Thr	Ser						
				85					90						

<210> 133  
 <211> 97  
 <212> PRT  
 <213> Homo sapiens

<400> 133

Met Pro Arg His Cys Ser Ala Ala Gly Cys Cys Thr Arg Asp Thr Arg  
 1 5 10 15  
 Glu Thr Arg Asn Arg Gly Ile Ser Phe His Arg Leu Pro Lys Lys Asp  
 20 25 30  
 Asn Pro Arg Arg Gly Leu Trp Leu Ala Asn Cys Gln Arg Leu Asp Pro  
 35 40 45  
 Ser Gly Gln Gly Leu Trp Asp Pro Ala Ser Glu Tyr Ile Tyr Phe Cys  
 50 55 60  
 Ser Lys His Phe Glu Glu Asp Cys Phe Glu Leu Val Gly Ile Ser Gly  
 65 70 75 80  
 Tyr His Arg Leu Lys Glu Gly Ala Val Pro Thr Ile Phe Glu Ser Phe  
 85 90 95  
 Ser

<210> 134  
 <211> 92  
 <212> PRT  
 <213> Homo sapiens

<400> 134  
 Met Thr Arg Ser Cys Ser Ala Val Gly Cys Ser Thr Arg Asp Thr Val  
 1 5 10 15  
 Leu Ser Arg Glu Arg Gly Leu Ser Phe His Gln Phe Pro Thr Asp Thr  
 20 25 30  
 Ile Gln Arg Ser Lys Trp Ile Arg Ala Val Asn Arg Val Asp Pro Arg  
 35 40 45  
 Ser Lys Lys Ile Trp Ile Pro Gly Pro Gly Ala Ile Leu Cys Ser Lys  
 50 55 60  
 His Phe Gln Glu Ser Asp Phe Glu Ser Tyr Gly Ile Arg Arg Lys Leu  
 65 70 75 80  
 Lys Lys Gly Ala Val Pro Ser Val Ser Leu Tyr Lys  
 85 90

<210> 135  
 <211> 96  
 <212> PRT  
 <213> Homo sapiens

<400> 135  
 Met Val Lys Cys Cys Ser Ala Ile Gly Cys Ala Ser Arg Cys Leu Pro  
 1 5 10 15  
 Asn Ser Lys Leu Lys Gly Leu Thr Phe His Val Phe Pro Thr Asp Glu  
 20 25 30  
 Asn Ile Lys Arg Lys Trp Val Leu Ala Met Lys Arg Leu Asp Val Asn  
 35 40 45  
 Ala Ala Gly Ile Trp Glu Pro Lys Lys Gly Asp Val Leu Cys Ser Arg  
 50 55 60  
 His Phe Lys Lys Thr Asp Phe Asp Arg Ser Ala Pro Asn Ile Lys Leu  
 65 70 75 80  
 Lys Pro Gly Val Ile Pro Ser Ile Phe Asp Ser Pro Tyr His Leu Gln  
 85 90 95

<210> 136

<211> 90  
 <212> PRT  
 <213> Homo sapiens

<400> 136  
 Met Pro Gly Phe Thr Cys Cys Val Pro Gly Cys Tyr Asn Asn Ser His  
 1 5 10 15  
 Arg Asp Lys Ala Leu His Phe Tyr Thr Phe Pro Lys Asp Ala Glu Leu  
 20 25 30  
 Arg Arg Leu Trp Leu Lys Asn Val Ser Arg Ala Gly Val Ser Gly Cys  
 35 40 45  
 Phe Ser Thr Phe Gln Pro Thr Thr Gly His Arg Leu Cys Ser Val His  
 50 55 60  
 Phe Gln Gly Gly Arg Lys Thr Tyr Thr Val Arg Val Pro Thr Ile Phe  
 65 70 75 80  
 Pro Leu Arg Gly Val Asn Glu Arg Lys Val  
 85 90

<210> 137  
 <211> 90  
 <212> PRT  
 <213> Homo sapiens

<400> 137  
 Met Pro Ala Arg Cys Val Ala Ala His Cys Gly Asn Thr Thr Lys Ser  
 1 5 10 15  
 Gly Lys Ser Leu Phe Arg Phe Pro Lys Asp Arg Ala Val Arg Leu Leu  
 20 25 30  
 Trp Asp Arg Phe Val Arg Gly Cys Arg Ala Asp Trp Tyr Gly Gly Asn  
 35 40 45  
 Asp Arg Ser Val Ile Cys Ser Asp His Phe Ala Pro Ala Cys Phe Asp  
 50 55 60  
 Val Ser Ser Val Ile Gln Lys Asn Leu Arg Phe Ser Gln Arg Leu Arg  
 65 70 75 80  
 Leu Val Ala Gly Ala Val Pro Thr Leu His  
 85 90

<210> 138  
 <211> 85  
 <212> PRT  
 <213> Drosophila melanogaster

<400> 138  
 Met Lys Tyr Cys Lys Phe Cys Cys Lys Ala Val Thr Gly Val Lys Leu  
 1 5 10 15  
 Ile His Val Pro Lys Cys Ala Ile Lys Arg Lys Leu Trp Glu Gln Ser  
 20 25 30  
 Leu Gly Cys Ser Leu Gly Glu Asn Ser Gln Ile Cys Asp Thr His Phe  
 35 40 45  
 Asn Asp Ser Gln Trp Lys Ala Ala Pro Ala Lys Gly Gln Thr Phe Lys  
 50 55 60  
 Arg Arg Arg Leu Asn Ala Asp Ala Val Pro Ser Lys Val Ile Glu Pro  
 65 70 75 80  
 Glu Pro Glu Lys Ile  
 85

<210> 139  
 <211> 63  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> THAP Domain consensus

<221> UNSURE  
 <222> 4-5, 7, 9-10, 12, 15-20, 22, 24, 32, 35, 38-39, 42-43, 46-47, 49-51, 53-61, 63  
 <223> Xaa = any of the twenty amino acids

<400> 139  
 Met Pro Lys Xaa Xaa Cys Xaa Ala Xaa Xaa Cys Xaa Asn Arg Xaa Xaa  
 1 5 10 15  
 Xaa Xaa Xaa Xaa Lys Xaa Lys Xaa Val Ser Phe His Lys Phe Pro Xaa  
 20 25 30  
 His Asp Xaa His Asp Xaa Xaa Arg Arg Xaa Xaa Trp Val Xaa Xaa Val  
 35 40 45  
 Xaa Xaa Xaa Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Trp Xaa  
 50 55 60

<210> 140  
 <211> 17  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> DR-5-related sequence

<400> 140  
 gggcatacta ctggcaa 17

<210> 141  
 <211> 17  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> DR-5-related sequence

<400> 141  
 gggcaaactg tgggcat 17

<210> 142  
 <211> 17  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> DR-5-related sequence

<400> 142

gggcatacta ctggcaa	17
<210> 143	
<211> 17	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> DR-5-related sequence	
<400> 143	
gggcaaacta ctggcaa	17
<210> 144	
<211> 17	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> DR-5-related sequence	
<400> 144	
gggccagttc gttgcaa	17
<210> 145	
<211> 16	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> DR-5-related sequence	
<400> 145	
gggcatgtac tggcaa	16
<210> 146	
<211> 16	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> DR-5-related sequence	
<400> 146	
gggcaactgt gggcaa	16
<210> 147	
<211> 18	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> DR-5-related sequence	
<400> 147	
gggcaacact actggcaa	18

<210> 148  
 <211> 17  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> DR-5-related sequence  
  
 <400> 148  
 gggcaaagta ctggcaa 17  
  
 <210> 149  
 <211> 17  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> DR-5 consensus sequence  
  
 <221> unsure  
 <222> 7-11  
 <223> n = any of the four nucleotides  
  
 <400> 149  
 gggcaannnn ntggcaa 17  
  
 <210> 150  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> ER-11-related sequence  
  
 <400> 150  
 ttgccagtac taagtgtggg caa 23  
  
 <210> 151  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> ER-11-related sequence  
  
 <400> 151  
 ctgccagtac atagtgtggg caa 23  
  
 <210> 152  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> ER-11-related sequence  
  
 <400> 152



ttgccagtac taagtgtggg caa	23
<210> 153	
<211> 23	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> ER-11-related sequence	
<400> 153	
ctgccagtag atactgtggg caa	23
<210> 154	
<211> 24	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> ER-11-related sequence	
<400> 154	
ttgccagtag ttaggtgtgg gcga	24
<210> 155	
<211> 23	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> ER-11-related sequence	
<400> 155	
ttgccagtag ttagtgtggg caa	23
<210> 156	
<211> 23	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> ER-11-related sequence	
<400> 156	
ttgccagtac ctactaaggg caa	23
<210> 157	
<211> 23	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> ER-11-related sequence	
<400> 157	
ttgccagtag ttagtgtggg cag	23

<210> 158  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> ER-11-related sequence

<400> 158  
 ctgccagtag taagtgtggg cag 23

<210> 159  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> ER-11 consensus sequence

<221> unsure  
 <222> 7-17  
 <223> n = any of the four nucleotides

<400> 159  
 ttgccannnn nnnnnnnggg caa 23

<210> 160  
 <211> 642  
 <212> DNA  
 <213> Homo sapiens

<400> 160  
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 <211> 687  
 <212> DNA  
 <213> Homo sapiens

<400> 161  
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<210> 162  
 <211> 720  
 <212> DNA  
 <213> Homo sapiens

<400> 162					
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<210> 163  
 <211> 1734  
 <212> DNA  
 <213> Homo sapiens

<400> 163					
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 <212> DNA  
 <213> Homo sapiens

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<210> 165  
 <211> 669  
 <212> DNA  
 <213> Homo sapiens

<400> 165					
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gcaatgaaaa	gacttgatgt	gaatgcagcc	ggcatttggg	agcctaaaaa	aggagatgtg 180
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aaacttcatt	gtagaaaaaa	cttcaccctc	aaaaccggtc	cagccactaa	ctacaatcac 360
catcttggtg	gtgcttcctc	atgtattgaa	gaattccaat	cccagttcat	ttttgaacat 420
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atttcatga					669

<210> 166  
 <211> 930  
 <212> DNA  
 <213> Homo sapiens

<400> 166

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<210> 167  
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 <212> DNA  
 <213> Homo sapiens

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<400> 167
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 <212> DNA  
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 <212> DNA  
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agcattcgcc	acctgcgtct	cactgaggcc	aagctgcgcg	aagaactgcg	tgagaaggat	900
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<210> 171  
 <211> 2286  
 <212> DNA  
 <213> Homo sapiens

<400> 171						
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gcagacttag	aagataaaaac	acctgatcag	ctaaataaac	attatcgatt	atgtgccaaa	180
cattttgaga	cctctatgat	ctgtagaact	agtccttata	ggacagttct	tcgagataat	240
gcaataccaa	caatatttga	tcttaccagt	catttgaaca	acccacatag	tagacacaga	300
aaacgaataa	aagaactgag	tgaagatgaa	atcaggacac	tgaaacagaa	aaaaattgat	360
gaaacttctg	agcaggaaca	aaaacataaa	gaaaccaaca	atagcaatgc	tcagaacccc	420
agcgaagaag	aggggtgaag	gcaagatgag	gacattttac	ctctaaccct	tgaagagaag	480
gaaaacaaag	aatacctaaa	atctctatatt	gaaatcttga	ttctgatggg	aaagcaaaaac	540
atacctctgg	atggacatga	ggctgatgaa	atcccagaag	gtctctttac	tccagataac	600
tttcaggcac	tgctggagtg	tcggataaat	tctgggtgaag	aggttctgag	aaagcggttt	660
gagacaacag	cagttaaacac	gttgttttgt	tcaaaaacac	agcagaggca	gatgctagag	720
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tccattatca	ctgacgatgt	agtggacata	gcagggggaag	agcacctacc	tgtgttggtg	840
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gccgatgcag	aaattttggc	tgtgaaattt	cacactatga	taactgagaa	gtgggggatta	960
aatatggagt	attgtcgtgg	ccaggcttac	attgtctcta	gtggattttc	ttccaaaatg	1020
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gaaatctgcc	attctcagtg	gacaggcagg	catgatgctt	ttgaaatttt	agtggaaactc	1320
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aactatatag	ctggccgagc	atttgtactc	tgcaagtgcg	tgtcagattt	tgatttcatt	1440

gttactattg	ttgtttcttaa	aaatgtccta	tctttttacaa	gagccttttg	gaaaaacctc	1500
caggggcaaa	cctctgatgt	cttcttttgcg	gccggtagct	tgactgcagt	actgcattca	1560
ctcaacgaag	tgatggaaaa	tattgaagtt	tatcatgaat	tttggtttga	ggaagccaca	1620
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ccaacagtgg	agcacattat	tcaggaactt	aaagatatat	tctcagaaca	gcacctcaaa	1800
gctcttaaat	gcttatctct	ggtaccctca	gtcatgggac	aactcaaatt	caatacgtcg	1860
gaggaacacc	atgctgacat	gtatagaagt	gacttaccca	atcctgacac	gctgtcagct	1920
gagcttcatt	gttggaagaat	caaattggaaa	cacaggggga	aagatataga	gcttccgtcc	1980
accatctatg	aagccctcca	cctgcctgac	atcaagtttt	ttcctaattgt	gtatgcattg	2040
ctgaagggtcc	tgtgtattct	tctgtgatg	aagggttgaga	atgagcggta	tgaaaatgga	2100
cgaaagcgtc	ttaaagcata	tttgaggaac	actttgacag	accaaagggtc	aagtaacttg	2160
gctttgctta	acataaattt	tgatataaaa	cacgacctgg	atttaattggt	ggacacatat	2220
attaaactct	atacaagtaa	gtcagagctt	cctacagata	attccgaaac	tgtggaaaat	2280
acctaa						2286

<210> 172  
 <211> 633  
 <212> DNA  
 <213> Mus musculus

<400> 172	
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tccttccaca	agtttcctct
aaaaggaaaa	acttcaagcc
gactgcttta	agagggagtg
tttctctata	tcgagccaca
tctccttcac	cccccgcttc
cagacccctg	ataacctgtc
caccagagga	agaggatcct
aagacggccc	agcagcgggtg
gtccactttc	agagagagaa
gactactttg	aaattgttga
	agttccagca
	tga
	633

<210> 173  
 <211> 654  
 <212> DNA  
 <213> Mus musculus

<400> 173	
atgccgacca	attgcgccgc
agcttccaca	ggtttccttt
cgcaaaaatt	ttgtgccagg
tgttttgatc	taacaggaca
gattttttgta	cccatataaa
aacagttttc	ctccaactgg
cttgaacaca	gttatgcctt
gaaaaggaaa	tagcaagctt
gcaactcgaa	ggtggatcaa
ctacctaagg	gcattctcaga
gatttaaaaa	gtcttgaaca
	agatcaacaa
	gataaaacag
	taccattct
	ctaa
	654

<210> 174  
 <211> 657  
 <212> DNA  
 <213> Mus musculus



<400> 174  
 atgccgaagt cttgcgcggc ccggcaatgc tgcaaccgct acagcagccg caggaagcag 60  
 ctcaccttcc accggttccc cttcagccgc ccggagctgt tgagggagtg ggtgctcaac 120  
 atcggccggg ctgacttcaa gctaagcag cacacagtca tctgctcgga acacttcaga 180  
 cccgagtgtc tcagcgcctt tgggaaccgc aagaacctga aacacaatgc tgtgcccacg 240  
 gtgttcgctt ttcagaaccc cacagaggtc tgcctgagg tgggggctgg tggggacagc 300  
 tcagggagga acatggacac cacactggaa gaacttcagc ctccaacccc ggaaggcccc 360  
 gtgcagcagg tcttaccaga tcgagaagca atggaggcca cggaggccgc tggcctgcct 420  
 gccagccctc tgggggttgaa gaggccctt ccgggacagc cgtctgatca cagttatgcc 480  
 ctttcggact tggataccct caaaaaaaaa ctctttctca cactgaagga aaacaagagg 540  
 cttcgggaagc ggctgaaagc ccagaggctg ctgttgcgga ggacatgtgg ccgcctgaga 600  
 gctacagag agggacagcc gggacctcgg gccagacggc cggcacaggg aagctga 657

<210> 175  
 <211> 558  
 <212> DNA  
 <213> Mus musculus

<400> 175  
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 aagacagact ttgacagaag cactctaaac actaagctga aggcaggagc catcccttct 120  
 atctttgaat gtccatatca cttacaggag aaaagagaaa aacttcactg tagaaaaaac 180  
 ttctttctca aaaccttccc catcaccac catggccgcc agcttggttg tgcctcctgc 240  
 attgaagaat tcgaacccca gtctattttt gaacatagct acagtgttat ggacagccca 300  
 aagaagctta agcataagct agaccgtgtg atcatcgagc tggagaatac caaggaaagc 360  
 ctacggaatg ttttagcccg agaaaaacac tttcaaaagt cactgaggaa gacaatcatg 420  
 gaactaaagg atgaaagtct gatcagccag gaaacagcca atagtctggg tgctttctgt 480  
 tgggagtgct atcatgaaag cacagcagga ggctgtagtt gtgaagtcac ttcttatatg 540  
 cttcatctgc agttgaca 558

<210> 176  
 <211> 1719  
 <212> DNA  
 <213> Homo sapiens

<400> 176  
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 cctacgcctc gtccctaca agctcctcca agccccgcg gctgctgtgg gagcggcggc 120  
 cgtcctctcc ttggagtcgt ctcctggcat cctcggggcc gcaggaagga agaggaggca 180  
 gcggccggag ccttggtggg cggcctgagg tgagagccc accggccctt ttgggaatat 240  
 ggcgaccggt ggctaccgga ccagcagcgg cctcggcggc agcaccacag acttccctga 300  
 ggagtggaa gcgaaacgcg agaagatgcg cgccaagcag aaccccccg gcccggcccc 360  
 cccgggaggg ggcagcagcg acgcccgtgg gaagccccc gcgggggctc tgggcacccc 420  
 ggcggccgcc gctgccaacg agctcaacaa caacctcccg ggcggcgcgc cggccgcacc 480  
 tgccgtcccc ggtcccgggg gcgtgaactg cgcggctcggc tccgccatgc tgacgcgggc 540  
 gcccccgccc cgcggcccgc ggcggtcgga ggacgagccc ccagccgcct ctgcctcggc 600  
 tgcaccgccc cccagcgtg acgaggagga gccggacggc gtcccagaga agggcaagag 660  
 ctcgggcccc agtgccagga aaggcaaggg gcagatcgag aagaggaagc tgcgggagaa 720  
 gcggcgctcc accggcgtgg tcaacatccc tgccgcagag tgcttagatg agtacgaaga 780  
 tgatgaagca gggcagaaa agcggaacg agaagatgca attacacaac agaactat 840  
 tcagaatgaa gctgtaaact tactagatcc aggcagttcc tatctgctac aggagccacc 900  
 tagaacagtt tcaggcagat ataaaagcac aaccagtgtc tctgaagaag atgtctcaag 960  
 tagatattct cgaacagata gaagtgggtt ccctagatat aacagggatg caaatgtttc 1020  
 aggtactctg gtttcaagta gcacactgga aaagaaaatt gaagatcttg aaaaggaagt 1080  
 agtaacagaa agacaagaaa acctaagact tgtgagactg atgcaagata aagaggaaat 1140  
 tattggaaaa ctcaaagaag aaattgattt attaaataga gacctagatg acatagaaga 1200  
 tgaaaatgaa cagctaaagc aggaaaataa aactcttttg aaagttgtgg gtcagctgac 1260

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caggtagagg attcaagact caatgtggaa aaaatatattt aaactactga ttgaatgtta 1320
atggtcaatg ctagcacaat attcctatgc tgcaatacat taaaataact aagcaagtat 1380
atttatttct agcaaacaga tggttggtttt caaaataactt ctttttcatt attgggttta 1440
aaaaagcatt atcctttttat ctcacaaata agtaatatct ttcagttatt aaatgataga 1500
taatgccttt ttggttttgt gtggtattca actaatacat ggtttaaagt cacagccgtt 1560
tgaatatatt ttatcttggt agtacatttt ctccttagg aatatacata gtctttgttt 1620
acatgagttc caatactttt gggatgttac cctcacatgt ccctatactg atgtgtgcca 1680
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<210> 177
<211> 878
<212> DNA
<213> Homo sapiens

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<400> 177
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gttctggcct ttggcatccc caggacccaa ggcagtgatg gaggggctca ggactgttgc 180
ctcaagtaca gccaaaggaa gattcccgc aaggttgtcc gcagctaccg gaagcaggaa 240
ccaagcttag gctgctccat ccagctatc ctgttcttgc cccgcaagcg ctctcaggca 300
gagctatgtg cagacccaaa ggagctctgg gtgcagcagc tgatgcagca tctggacaag 360
acaccatccc cacagaaacc agcccagggc tgcaggaagg acaggggggc ctccaagact 420
ggcaagaaag gaaagggtc caaaggctgc aagaggactg agcggtcaca gaccctaaa 480
gggccatagc ccagttagca gcctggagcc ctggagacc caccagctc accagcgtt 540
gaagcctgaa cccaagatgc aagaaggagg ctatgtcag gggccctgga gcagccccc 600
catgtctggc ttgccact ctttctctg ctttaaccac cccatctgca tcccagctc 660
tacctgcat ggctgagctg cccacagcag gccaggcca gagagaccga ggaggagag 720
tctcccaggg agcatgagag gaggcagcag gactgtcccc ttgaaggaga atcatcagga 780
ccctggacct gatacggctc ccagtacac cccacctctt ccttgtaaat atgatttata 840
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<210> 178
<211> 34
<212> PRT
<213> Artificial Sequence

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<220>
<223> Interferon gamma homology motif of THAP1

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<400> 178
Asn Tyr Thr Val Glu Asp Thr Met His Gln Arg Lys Arg Ile His Gln
 1             5             10            15
Leu Glu Gln Gln Val Glu Lys Leu Arg Lys Lys Leu Lys Thr Ala Gln
      20             25             30
Gln Arg

```

```

<210> 179
<211> 20
<212> PRT
<213> Artificial Sequence

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<220>
<223> Nuclear localization sequence of THAP1

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<400> 179

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Arg Lys Arg Ile His Gln Leu Glu Gln Gln Val Glu Lys Leu Arg Lys  
 1 5 10 15  
 Lys Leu Lys Thr  
 20

<210> 180  
 <211> 38  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Consensus sequence for PAR4 binding domain of THAP

<221> UNSURE  
 <222> 3-16, 19, 23, 25-35  
 <223> Xaa = any of the twenty amino acids

<221> VARIANT  
 <222> 37  
 <223> Xaa = Arg or Lys

<400> 180  
 Leu Glu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 1 5 10 15  
 Gln Arg Xaa Arg Arg Gln Xaa Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 20 25 30  
 Xaa Xaa Xaa Gln Arg Glu  
 35

<210> 181  
 <211> 50  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Primer

<400> 181  
 gaattcggcc attatggcct gcaggatccg gccgcctcgg cccaggatcc 50

<210> 182  
 <211> 111  
 <212> PRT  
 <213> Homo sapiens

<220>

<400> 182  
 Ser Asp Gly Gly Ala Gln Asp Cys Cys Leu Lys Tyr Ser Gln Arg Lys  
 1 5 10 15  
 Ile Pro Ala Lys Val Val Arg Ser Tyr Arg Lys Gln Glu Pro Ser Leu  
 20 25 30  
 Gly Cys Ser Ile Pro Ala Ile Leu Phe Leu Pro Arg Lys Arg Ser Gln  
 35 40 45  
 Ala Glu Leu Cys Ala Asp Pro Lys Glu Leu Trp Val Gln Gln Leu Met

50		55		60
Gln His Leu Asp Lys Thr Pro Ser Pro Gln Lys Pro Ala Gln Gly Cys				
65		70		75
Arg Lys Asp Arg Gly Ala Ser Lys Thr Gly Lys Lys Gly Lys Gly Ser				80
	85		90	
Lys Gly Cys Lys Arg Thr Glu Arg Ser Gln Thr Pro Lys Gly Pro				95
	100		105	110

<210> 183  
 <211> 37  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Primer

<400> 183  
 gcgggatccg tagtgatgga ggggctcagg actgttg 37

<210> 184  
 <211> 35  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Primer

<400> 184  
 gcgggatccc tatggccctt taggggtctg tgacc 35

<210> 185  
 <211> 33  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Primer

<400> 185  
 ccgaattcag gatggtgcag tctgtctccg cct 33

<210> 186  
 <211> 39  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Primer

<400> 186  
 cgcggatcct gctggtactt caactatttc aaagtagtc 39

<210> 187  
 <211> 33  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Primer  
  
 <400> 187  
 ccgaattcag gatggtgcag tcctgctccg cct 33  
  
 <210> 188  
 <211> 39  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer  
  
 <400> 188  
 cgcggatcct gctggtactt caactatttc aaagtagtc 39  
  
 <210> 189  
 <211> 33  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer  
  
 <400> 189  
 gcggaattca tggcgaccgg tggctaccgg acc 33  
  
 <210> 190  
 <211> 35  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer  
  
 <400> 190  
 gcgggatccc tctacctggt cagctgaccc acaac 35  
  
 <210> 191  
 <211> 33  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer  
  
 <400> 191  
 ccgaattcag gatggtgcag tcctgctccg cct 33  
  
 <210> 192  
 <211> 39  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>

<223> Primer

<400> 192

cgcggtatcct gctggtactt caactatttc aaagtagtc

39

<210> 193

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 193

cgcggaattcg ccatcatggg gttccctaga tataacaggg atgcaa

46

<210> 194

<211> 37

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 194

gccggatccg ggttccctag atataacagg gatgcaa

37

<210> 195

<211> 37

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 195

gcgctctaga gccatcatgg aggagcagaa gctgatac

37

<210> 196

<211> 37

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 196

cttgcgggccg cctctacctg gtcagctgac ccacaac

37

<210> 197

<211> 37

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 197  
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 <210> 198  
 <211> 39  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer  
  
 <400> 198  
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 <210> 199  
 <211> 35  
 <212> DNA  
 <213> Artificial Sequence  
  
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 <400> 199  
 gcggaattca tgccgcctct tcagaccctt gttaa 35  
  
 <210> 200  
 <211> 36  
 <212> DNA  
 <213> Artificial Sequence  
  
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 <223> Primer  
  
 <400> 200  
 gcggaattca tgcaccagcg gaaaaggatt catcag 36  
  
 <210> 201  
 <211> 33  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer  
  
 <400> 201  
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 <210> 202  
 <211> 39  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer  
  
 <400> 202  
 gcgggatccc ttgtcatgtg gctcagtaca aagaaatat 39

<210> 203  
 <211> 34  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Primer

<400> 203  
 cgggatcctg tgcggtcttg agcttctttc tgag 34

<210> 204  
 <211> 36  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Primer

<400> 204  
 gcgggatccg tcgtctttct ctttctggaa gtgaac 36

<210> 205  
 <211> 36  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Consensus sequence for PAR4 binding domain of THAP

<221> UNSURE  
 <222> 3-14, 17, 21, 23-33, 35  
 <223> Xaa = any of the twenty amino acids

<400> 205  
 Leu Glu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Gln Arg  
 1 5 10 15  
 Xaa Arg Arg Gln Xaa Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 20 25 30  
 Xaa Gln Xaa Glu  
 35

<210> 206  
 <211> 39  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Primer

<400> 206  
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<210> 207  
 <211> 39



<212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer  
  
 <400> 207  
 caagctgccg ttcttgagca ggcacatcgct gctgtgagg 39  
  
 <210> 208  
 <211> 32  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer  
  
 <400> 208  
 gctcaagacc gcacagcaag aacggcagct tg 32  
  
 <210> 209  
 <211> 32  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer  
  
 <400> 209  
 caagctgccg ttcttgctgt gcggtcttga gc 32  
  
 <210> 210  
 <211> 36  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer  
  
 <400> 210  
 gcgggatccc taaattagaa aggggtgggg gtagcc 36  
  
 <210> 211  
 <211> 32  
 <212> DNA  
 <213> Artificial Sequence  
  
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 <223> Primer  
  
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 gcggaattca tggagcctgc acccgccga tc 32  
  
 <210> 212  
 <211> 37  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Primer  
  
 <400> 212  
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 <210> 213  
 <211> 39  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer  
  
 <400> 213  
 cgcggatcct gctggtactt caactatttc aaagtagtc 39  
  
 <210> 214  
 <211> 33  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer  
  
 <400> 214  
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 <210> 215  
 <211> 39  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer  
  
 <400> 215  
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 <211> 33  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Primer  
  
 <400> 216  
 gccgaattca tgccgaactt ctgcgctgcc ccc 33  
  
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 <211> 40  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>

<223> Primer

<400> 217

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<210> 218

<211> 39

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

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<213> Homo sapiens

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<212> DNA

<213> Homo sapiens

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<212> DNA
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<210> 259

<211> 986

<212> DNA

<213> Mus musculus

<400> 259

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tatcaaggcc	gagcgcggga	ccccgacggc	ccccttcgcc	tgctctccgg	gccgaaggag	180
agtgtggagg	gccagaagga	tggtgcagtc	ctgctccgcc	tacggctgca	agaaccgcta	240
cgacaaggac	aagcccgtct	ccttccacaa	gtttcctctt	actcgcccca	gcctttgtaa	300
gcagtgggag	gcagctgtta	aaaggaaaaa	cttcaagccc	accaagtaca	gcagcatctg	360
ctcggagcac	ttcaccgccg	actgctttta	gagggagtgc	aacaacaagc	tactgaagga	420
gaacgctgtg	cccacaatat	ttctctatat	cgagccacat	gagaagaagg	aagacctgga	480
atcccaagaa	cagctcccct	ctccttcacc	ccccgcttcc	caggttgatg	ctgctattgg	540
gctgctaattg	ccccctctgc	agacccctga	taacctgtcg	gttttctgtg	accacaatta	600
cactgtggag	gatacgatgc	accagaggaa	gaggatcctg	cagctggagc	agcaggtgga	660
gaaactcagg	aagaagctca	agacggccca	gcagcgggtg	cggcggcagg	agaggcagct	720
cgagaagctc	aaggaaagt	tccactttca	gagagagaag	gacgacgcgt	ccgagagggg	780
ctacgtgatc	ctaccaaattg	actactttga	aattgttgaa	gttccagcat	gaaaaaatga	840
gatgtgttag	tgggacaaga	ctatacacct	tcttttagcc	tacatacagg	agttcatttg	900



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atatactgta aaaaaaaaaa aaaaaa 986

<210> 260

<211> 1515

<212> DNA

<213> Mus musculus

<400> 260

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cgaatgaggg gcccggggaa atgccgacca attgcgcccgc ggcgggctgt gctgctacct 180
acaacaagca cattaacatc agcttcacac ggtttccctt ggatcctaaa agaagaaaag 240
aatgggttcg cctgggttag cgcaaaaatt ttgtgccagg aaaacacact tttctttgct 300
caaagcactt tgaagcctcc tgttttgatc taacaggaca aaccgcagca cttaaaatgg 360
atgctgttcc aaccattttt gatttttgta cccatataaa gtctctgaaa ctcaagtcaa 420
ggaatcttct gaagacaaac aacagttttc ctccaactgg accatgtaat ttaaagctga 480
acggcagtcg gcaagtactg ctggaacaca gttatgcctt taggaaccct atggaggcga 540
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gcctgcaaaag agaacgcaga gcaactcgaa ggtggatcaa agccacgtgc tttgtgaaga 660
gcttagaagc aagtaacatg ctacctaaag gcatctcaga acagatttta ccaactgcct 720
taagcaatct tcctctggaa gatttaaaaa gtcttgaaca agatcaacaa gataaaacag 780
taccattctc ctaaatgtaa aatggaagag actctctgca ctcaagtttt cctcacacag 840
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tctaagaac atgtgaagta ggagctaaact gcattaaata tgatcttaaa actactaatg 1200
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aaaagtaggt tgtaaaataa tctgaaatag tattttgaat gtgaaatacc tttgaaactc 1440
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tctaagaaaa tatac 1515

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<210> 261

<211> 1120

<212> DNA

<213> Mus musculus

<400> 261

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gctgttgagg gagtgggtgc tcaacatcgg ccgggctgac ttcaagccta agcagcacac 180
agtcactcgc tcggaacact tcagaccoga gtgcttcagc gcctttggga accgcaagaa 240
cctgaaacac aatgctgtgc ccacgggtgt cgcttttcag aacccacag aggtctgccc 300
tgaggtgggg gctgggtggg acagctcagg gaggaacatg gacaccacac tggagaact 360
tcagcctcca accccggaag gcccgtgca gcaggcttta ccagatcgag aagcaatgga 420
ggccacggag gccgctggcc tgccctgccag ccctctgggg ttgaagaggc cccttcggg 480
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tctcacactg aaggaaaaca agaggcttcg gaagcggctg aaagcccaga ggctgctgtt 600
gcggaggaca tgtggccgcc tgagagccta cagagaggga cagccgggac ctcgggccag 660
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ccttagcagg aagtgggtgt ctggcctgct atgggcgttt ctaccgctg ctgatgctgc 780
aggtgccttg agagtgggat gggatgctgc gacaggcagt tgcgggtgg gggcccaagt 840
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gtgaccaaatt gtgagccgtc acaacccccct caagagatgc tcccagaggg agagctgggc 960  
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 gggcaagggt ccccgtcagc ctgtatttct gagtgactct tttttctgcc tggttcgtgt 1080  
 agatgtggaa taaatctttt gaagtctcca aaaaaaaaaa 1120

<210> 262  
 <211> 558  
 <212> DNA  
 <213> Mus musculus

<400> 262  
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 aagacagact ttgacagaag cactctaaac actaagctga aggcaggagc catcccttct 120  
 atctttgaat gtccatatca cttacaggag aaaagagaaa aacttcaactg tagaaaaaac 180  
 ttctttctca aaacctttcc catcacccac catggccgcc agcttggttg tgctctctgc 240  
 attgaagaat tcgaacccca gttcattttt gaacatagct acagtgttat ggacagccca 300  
 aagaagctta agcataagct agaccgtgtg atcatcgagc tggagaatac caaggaaagc 360  
 ctacggaatg ttttagcccg agaaaaacac tttcaaaagt cactgaggaa gacaatcatg 420  
 gaactaaagg atgaaagtct gatcagccag gaaacagcca atagtctggg tgctttctgt 480  
 tgggagtgtc atcatgaaag cacagcagga ggctgtagtt gtgaagtcac ttcttatatg 540  
 cttcatctgc agttgaca 558

<210> 263  
 <211> 37  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Consensus sequence for PAR4 binding domain of THAP  
 <221> UNSURE  
 <222> 3-15, 18, 22, 24-34, 36  
 <223> Xaa = any of the twenty amino acids

<400> 263  
 Leu Glu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Gln  
 1 5 10 15  
 Arg Xaa Arg Arg Gln Xaa Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 20 25 30  
 Xaa Xaa Gln Xaa Glu  
 35

<210> 264  
 <211> 22  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Primer

<400> 264  
 ccgctcgagg tgcagtcctg ct 22

<210> 265  
 <211> 29  
 <212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 265  
cgggatccgc tggacttca actatttca 29

<210> 266  
<211> 22  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Primer

<400> 266  
ccgctcgagg atacaatgca cc 22

<210> 267  
<211> 33  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Primer

<400> 267  
gcgggatccg ctggtacttc aactatttca aag 33

<210> 268  
<211> 86  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide

<400> 268  
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caggttcac tggtagctc gagatt 86

<210> 269  
<211> 26  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Primer

<400> 269  
tagggtcgac gccaccatgg agacag 26

<210> 270  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Primer

<400> 270

ccgctcgagg tcaccagtgg a

21

<210> 271

<211> 134

<212> PRT

<213> Homo sapiens

<400> 271

Met Ala Gln Ser Leu Ala Leu Ser Leu Leu Ile Leu Val Leu Ala Phe  
1 5 10 15  
Gly Ile Pro Arg Thr Gln Gly Ser Asp Gly Gly Ala Gln Asp Cys Cys  
20 25 30  
Leu Lys Tyr Ser Gln Arg Lys Ile Pro Ala Lys Val Val Arg Ser Tyr  
35 40 45  
Arg Lys Gln Glu Pro Ser Leu Gly Cys Ser Ile Pro Ala Ile Leu Phe  
50 55 60  
Leu Pro Arg Lys Arg Ser Gln Ala Glu Leu Cys Ala Asp Pro Lys Glu  
65 70 75 80  
Leu Trp Val Gln Gln Leu Met Gln His Leu Asp Lys Thr Pro Ser Pro  
85 90 95  
Gln Lys Pro Ala Gln Gly Cys Arg Lys Asp Arg Gly Ala Ser Lys Thr  
100 105 110  
Gly Lys Lys Gly Lys Gly Ser Lys Gly Cys Lys Arg Thr Glu Arg Ser  
115 120 125  
Gln Thr Pro Lys Gly Pro  
130

<210> 272

<211> 878

<212> DNA

<213> Homo sapiens

<400> 272

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gttctggcct ttggcatccc caggacccaa ggcagtgatg gaggggctca ggactgttgc 180  
ctcaagtaca gccaaaggaa gattcccgcc aagggtgtcc gcagctaccg gaagcaggaa 240  
ccaagcttag gctgctccat ccagctatc ctgttcttgc ccgcaagcg ctctcaggca 300  
gagctatgtg cagacccaaa ggagctctgg gtgcagcagc tgatgcagca tctggacaag 360  
acaccatccc cacagaaacc agcccagggc tgcaggaagg acaggggggc ctccaagact 420  
ggcaagaaag gaaagggctc caaaggctgc aagaggactg agcgggtcaca gaccocctaaa 480  
gggccatagc ccagtgcagc gctggagacc ctggagaccc caccagcctc accagcgctt 540  
gaagcctgaa cccaagatgc aagaaggagg ctatgctcag gggccctgga gcagccaccc 600  
catgctggcc ttgccacact ctttctcctg ctttaaccac cccatctgca ttcccagctc 660  
taccctgcat ggctgagctg ccacagcag gccagggtcca gagagaccga ggagggagag 720  
tctcccaggg agcatgagag gaggcagcag gactgtcccc ttgaaggaga atcatcagga 780  
ccctggacct gatacggctc ccagctacac ccacctctt ccttgtaaat atgatttata 840  
cctaactgaa taaaagctg ttctgtcttc ccacccaa 878

<210> 273

<211> 98

<212> PRT  
 <213> Homo sapiens

<400> 273

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Met Ala Leu Leu Leu Ala Leu Ser Leu Leu Val Leu Trp Thr Ser Pro
 1           5           10           15
Ala Pro Thr Leu Ser Gly Thr Asn Asp Ala Glu Asp Cys Cys Leu Ser
          20           25           30
Val Thr Gln Lys Pro Ile Pro Gly Tyr Ile Val Arg Asn Phe His Tyr
          35           40           45
Leu Leu Ile Lys Asp Gly Cys Arg Val Pro Ala Val Val Phe Thr Thr
          50           55           60
Leu Arg Gly Arg Gln Leu Cys Ala Pro Pro Asp Gln Pro Trp Val Glu
65           70           75           80
Arg Ile Ile Gln Arg Leu Gln Arg Thr Ser Ala Lys Met Lys Arg Arg
          85           90           95
Ser Ser
  
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<210> 274  
 <211> 684  
 <212> DNA  
 <213> Homo sapiens

<400> 274

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tgctctgttt caccctccat ggccctgcta ctggccctca gcctgctggg tctctggact 180
tccccagccc caactctgag tggcaccaat gatgctgaag actgctgcct gtctgtgacc 240
cagaaaccca tccctgggta catcgtgagg aacttccact accttctcat caaggatggc 300
tgcaggggtgc ctgctgtagt gttcaccaca ctgagggggc gccagctctg tgcaccccca 360
gaccagccct gggtagaacg catcatccag agactgcaga ggacctcagc caagatgaag 420
cgccgcagca gttaacctat gaccgtgcag agggagcccg gagtccgagt caagcattgt 480
gaattattac ctaacctggg gaaccgagga ccagaaggaa ggaccaggct tccagctcct 540
ctgcaccaga cctgaccagc caggacaggg cctgggggtgt gtgtgagtgt gagtgtgagc 600
gagaggggtga gtgtggtcag agtaaagctg ctccaccccc agattgcaat gctaccaata 660
aagccgcctg gtgtttacaa ctaa                                     684
  
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<210> 275  
 <211> 125  
 <212> PRT  
 <213> Homo sapiens

<400> 275

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Met Lys Lys Ser Gly Val Leu Phe Leu Leu Gly Ile Ile Leu Leu Val
 1           5           10           15
Leu Ile Gly Val Gln Gly Thr Pro Val Val Arg Lys Gly Arg Cys Ser
          20           25           30
Cys Ile Ser Thr Asn Gln Gly Thr Ile His Leu Gln Ser Leu Lys Asp
          35           40           45
Leu Lys Gln Phe Ala Pro Ser Pro Ser Cys Glu Lys Ile Glu Ile Ile
          50           55           60
Ala Thr Leu Lys Asn Gly Val Gln Thr Cys Leu Asn Pro Asp Ser Ala
65           70           75           80
Asp Val Lys Glu Leu Ile Lys Lys Trp Glu Lys Gln Val Ser Gln Lys
          85           90           95
  
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Lys Lys Gln Lys Asn Gly Lys Lys His Gln Lys Lys Lys Val Leu Lys  
 100 105 110  
 Val Arg Lys Ser Gln Arg Ser Arg Gln Lys Lys Thr Thr  
 115 120 125

<210> 276  
 <211> 2545  
 <212> DNA  
 <213> Homo sapiens

<400> 276  
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 ttctctcttg gcatcatctt gctgggtctg attggagtg aaggaacccc agtagtgaga 120  
 aagggtcgct gttcttgcac cagcaccaac caagggacta tccacctaca atccttgaaa 180  
 gaccttaaac aatttgcccc aagcccttcc tgcgagaaaa ttgaaatcat tgctacactg 240  
 aagaatggag ttcaaacatg tctaaaccca gattcagcag atgtgaagga actgattaaa 300  
 aagtgggaga aacaggtcag ccaaaagaaa aagcaaaaga atgggaaaaa acatcaaaaa 360  
 aagaaagtgc tgaaagtctg aaaatctcaa cgttctcgtc aaaagaagac tacataagag 420  
 accacttcac caataagtat tctgtgttaa aaatgttcta ttttaattat accgctatca 480  
 ttccaaagga ggatggcata taatacaaaag gcttattaat ttgactagaa aatttaaaac 540  
 attactctga aattgtaact aaagtttagaa agttgatttt aagaatccaa acgttaagaa 600  
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 ttaaggccat gatttttagca ataccatgt ctacacagat gttcacccaa ccacatccca 720  
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 aagtcagctc ttctccatcc taccacaatg cagtgccttt cttctctcca gtgcacctgt 1140  
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 aaaatcatat aatcttataa tgaaaaggac tttatagatc agccagtgc caaccttttc 1800  
 ccaaccatac aaaaattcct tttccgaag gaaaagggtc ttctcaataa gcctcagctt 1860  
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 tcaatttatca tatatatata tacatgcata cactctcaaa gcaataaatt ttacttca 2460  
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<210> 277

<211> 98  
 <212> PRT  
 <213> Homo sapiens

<400> 277  
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 1 5 10 15  
 Ser Gly Ile Gln Gly Val Pro Leu Ser Arg Thr Val Arg Cys Thr Cys  
 20 25 30  
 Ile Ser Ile Ser Asn Gln Pro Val Asn Pro Arg Ser Leu Glu Lys Leu  
 35 40 45  
 Glu Ile Ile Pro Ala Ser Gln Phe Cys Pro Arg Val Glu Ile Ile Ala  
 50 55 60  
 Thr Met Lys Lys Lys Gly Glu Lys Arg Cys Leu Asn Pro Glu Ser Lys  
 65 70 75 80  
 Ala Ile Lys Asn Leu Leu Lys Ala Val Ser Lys Glu Met Ser Lys Arg  
 85 90 95  
 Ser Pro

<210> 278  
 <211> 1172  
 <212> DNA  
 <213> Homo sapiens

<400> 278  
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 attcaaggag tacctctctc tagaaccgta cgctgtacct gcacacagcat tagtaatcaa 180  
 cctgttaatc caaggctctt agaaaaactt gaaattattc ctgcaagcca attttgtcca 240  
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 tcgaaggcca tcaagaattt actgaaagca gttagcaagg aaatgtctaa aagatctcct 360  
 taaaaccaga ggggagcaaa atcgatgcag tgcttccaag gatggaccac acagaggctg 420  
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 gttacactaa aaggtagcca atgatggtca ccaaactcagc tgctactact cctgtaggaa 540  
 ggtaaatgtt catcatccta agctattcag taataactct accctggcac tataatgtaa 600  
 gctctactga ggtgctatgt tcttagtgga tgttctgacc ctgcttcaaa tatttccctc 660  
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 cttatttaat gaaagactgt acaaagtata agtcttagat gtatatattt cctatatatt 960  
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 ttttaaaaat acagatagat atatgctctg catgttacat aagataaatg tgctgaatgg 1080  
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<210> 279  
 <211> 166  
 <212> PRT  
 <213> Homo sapiens

<400> 279  
 Met Lys Tyr Thr Ser Tyr Ile Leu Ala Phe Gln Leu Cys Ile Val Leu  
 1 5 10 15  
 Gly Ser Leu Gly Cys Tyr Cys Gln Asp Pro Tyr Val Lys Glu Ala Glu





gcggaatcat gggcaccaat gatgctgaag actg 34

<210> 282  
<211> 34  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Primer

<400> 282  
gogggatcct taactgctgc ggcgcttcat cttg 34

<210> 283  
<211> 35  
<212> DNA  
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<220>  
<223> Primer

<400> 283  
gccgaattca cccagtagt gagaaagggt cgctg 35

<210> 284  
<211> 39  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Primer

<400> 284  
cgcggtatcct tatgtagtct tcttttgacg agaacgttg 39

<210> 285  
<211> 36  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Primer

<400> 285  
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<210> 286  
<211> 40  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Primer

<400> 286  
gcgggatcct taaggagatc ttttagacat ttcttgcga 40

<210> 287  
 <211> 33  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Primer

<400> 287  
 gcggaatcat gtgttactgc caggacccat atg 33

<210> 288  
 <211> 33  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Primer

<400> 288  
 gcgggatcct tactgggatg ctcttcgaac ttg 33

<210> 289  
 <211> 91  
 <212> PRT  
 <213> Homo sapiens

<400> 289  
 Met Lys Val Ser Ala Ala Ala Leu Ala Val Ile Leu Ile Ala Thr Ala  
 1 5 10 15  
 Leu Cys Ala Pro Ala Ser Ala Ser Pro Tyr Ser Ser Asp Thr Thr Pro  
 20 25 30  
 Cys Cys Phe Ala Tyr Ile Ala Arg Pro Leu Pro Arg Ala His Ile Lys  
 35 40 45  
 Glu Tyr Phe Tyr Thr Ser Gly Lys Cys Ser Asn Pro Ala Val Val Phe  
 50 55 60  
 Val Thr Arg Lys Asn Arg Gln Val Cys Ala Asn Pro Glu Lys Lys Trp  
 65 70 75 80  
 Val Arg Glu Tyr Ile Asn Ser Leu Glu Met Ser  
 85 90

<210> 290  
 <211> 1237  
 <212> DNA  
 <213> Homo sapiens

<400> 290  
 gctgcagagg attcctgcag aggatcaaga cagcacgtgg acctgcaca gcctctccca 60  
 caggtaccat gaaggtctcc gcggcagccc tcgtgtcat cctcattgct actgccctct 120  
 gcgctcctgc atctgcctcc ccatattcct cggacaccac acctgctgc ttgacctaca 180  
 ttgcccgcct actgccccgt gccacatca aggagtattt ctacaccagt ggcaagtgct 240  
 ccaaccagc agtcgtcttt gtcacccgaa agaaccgcca agtgtgtgcc aaccagaga 300  
 agaaatgggt tcgggagtag atcaactctt tggagatgag ctaggatgga gagtccctga 360  
 acctgaactt acacaaattt gcctgtttct gcttgctctt gtcctagctt gggaggcttc 420  
 ccctcactat cctacccac ccgtccttg aagggccag attctaccac acagcagcag 480  
 ttacaaaaac cttccccagg ctggacgtgg tggctcacgc ctgtaatccc agcactttgg 540

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gaggccaagg tgggtggatc acttgaggtc aggagttcga gaccagcctg gccaacatga 600
tgaaacccca tctctactaa aaatacaaaa aattagccgg gcgtggtagc gggcgccctgt 660
agtcccagct actcgggagg ctgaggcagg agaatggcgt gaaccggga ggcggagctt 720
gcagtgagcc gagatcgcg cactgcactc cagcctgggc gacagagcga gactccgtct 780
caaaaaaaaa aaaaaaaaaa aaaatacaaa aattagccgg gcgtggtagc ccacgcctgt 840
aatcccagct actcgggagg ctaaggcagg aaaattgttt gaaccaggga ggtggaggct 900
gcagtgagct gagattgtgc cacttcactc cagcctgggt gacaaagtga gactccgtca 960
caacaacaac aacaaaaagc ttccccaact aaagcctaga agagcttctg aggcgctgct 1020
ttgtcaaaag gaagtctcta ggttctgagc tctggctttg ccttggcttt gccagggctc 1080
tgtgaccagg aaggaagtca gcatgcctct agaggcaagg aggggaggaa cactgcactc 1140
ttaagcttcc gccgtctcaa cccctcacag gagcttactg gcaaacaatga aaaatcggct 1200
taccattaaa gttctcaatg caaccataaa aaaaaaa 1237

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<210> 291
<211> 33
<212> DNA
<213> Artificial Sequence

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<220>
<223> Primer

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<400> 291
cgcgatccg tgcagtcctg ctccgcctac ggc 33

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<210> 292
<211> 39
<212> DNA
<213> Artificial Sequence

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<220>
<223> Primer

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<400> 292
ccgaattctt atgctggtac ttcaactatt tcaaagtag 39

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<210> 293
<211> 16
<212> PRT
<213> Artificial Sequence

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<220>
<223> THAP antigenic peptide

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<400> 293
Ala Val Arg Arg Lys Asn Phe Lys Pro Thr Lys Tyr Ser Ser Ile Cys
1           5           10          15

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<210> 294
<211> 16
<212> PRT
<213> Artificial Sequence

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<220>
<223> Control peptide

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<400> 294

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Gln Val Glu Lys Leu Arg Lys Lys Leu Lys Thr Ala Gln Gln Arg Cys  
 1 5 10 15

<210> 295  
 <211> 33  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Primer

<400> 295  
 ccgaattcag gatggtgcag tctgtctccg cct 33

<210> 296  
 <211> 41  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Primer

<400> 296  
 gcgctctaga ttatgctggt acttcaacta tttcaaagta g 41

<210> 297  
 <211> 38  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Primer

<400> 297  
 gcgtctagaa tgagtgatgg aggggctcag gactgttg 38

<210> 298  
 <211> 38  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Primer

<400> 298  
 gggcggccgc ctatggccct ttaggggtct gtgaccgc 38

<210> 299  
 <211> 35  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Primer

<400> 299

gcgctcgagc tgcacctggg ccttctctgc cctgg

35

<210> 300

<211> 35

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 300

cgaagcttac tgtgctcctt ttatctctgc ccaag

35

<210> 301

<211> 420

<212> DNA

<213> Homo sapiens

<400> 301

cttctctgcc ctgggccaag cctgcccag cctctctgtc ctctgcctgc ccagctggac 60  
atctctgggc ctctctggag accagtgggg tgggctgtgg gggcgtcata ttgccctggc 120  
ttggcatccc tcttgtggct gtacccctcc cagcagcccc aggactagca agtccccgag 180  
atgggggtgg ggacagtggg tgatgcaaaa ggttgtgggg gcaggggagg ggcaggagca 240  
ggaaggctcc ctgagttccc tcaccttggg cagagataaa aggagcacag ttccaggcgg 300  
ggctgagcta gggcgtagct gtgatttcag gggcacctct ggcggctgcc gtgatttgag 360  
aatctcgggt ctcttggctg actgatcctg ggagactgtg gatgaataat gctggtgagt 420

<210> 302

<211> 378

<212> PRT

<213> Homo sapiens

<400> 302

Met Asp Leu Gly Lys Pro Met Lys Ser Val Leu Val Val Ala Leu Leu  
1 5 10 15  
Val Ile Phe Gln Val Cys Leu Cys Gln Asp Glu Val Thr Asp Asp Tyr  
20 25 30  
Ile Gly Asp Asn Thr Thr Val Asp Tyr Thr Leu Phe Glu Ser Leu Cys  
35 40 45  
Ser Lys Lys Asp Val Arg Asn Phe Lys Ala Trp Phe Leu Pro Ile Met  
50 55 60  
Tyr Ser Ile Ile Cys Phe Val Gly Leu Leu Gly Asn Gly Leu Val Val  
65 70 75 80  
Leu Thr Tyr Ile Tyr Phe Lys Arg Leu Lys Thr Met Thr Asp Thr Tyr  
85 90 95  
Leu Leu Asn Leu Ala Val Ala Asp Ile Leu Phe Leu Leu Thr Leu Pro  
100 105 110  
Phe Trp Ala Tyr Ser Ala Ala Lys Ser Trp Val Phe Gly Val His Phe  
115 120 125  
Cys Lys Leu Ile Phe Ala Ile Tyr Lys Met Ser Phe Phe Ser Gly Met  
130 135 140  
Leu Leu Leu Leu Cys Ile Ser Ile Asp Arg Tyr Val Ala Ile Val Gln  
145 150 155 160  
Ala Val Ser Ala His Arg His Arg Ala Arg Val Leu Leu Ile Ser Lys  
165 170 175  
Leu Ser Cys Val Gly Ile Trp Ile Leu Ala Thr Val Leu Ser Ile Pro

	180		185		190										
Glu	Leu	Leu	Tyr	Ser	Asp	Leu	Gln	Arg	Ser	Ser	Ser	Glu	Gln	Ala	Met
	195		200		205										
Arg	Cys	Ser	Leu	Ile	Thr	Glu	His	Val	Glu	Ala	Phe	Ile	Thr	Ile	Gln
	210		215		220										
Val	Ala	Gln	Met	Val	Ile	Gly	Phe	Leu	Val	Pro	Leu	Leu	Ala	Met	Ser
	225		230		235										
Phe	Cys	Tyr	Leu	Val	Ile	Ile	Arg	Thr	Leu	Leu	Gln	Ala	Arg	Asn	Phe
			245		250										
Glu	Arg	Asn	Lys	Ala	Ile	Lys	Val	Ile	Ile	Ala	Val	Val	Val	Val	Phe
			260		265										
Ile	Val	Phe	Gln	Leu	Pro	Tyr	Asn	Gly	Val	Val	Leu	Ala	Gln	Thr	Val
	275		280		285										
Ala	Asn	Phe	Asn	Ile	Thr	Ser	Ser	Thr	Cys	Glu	Leu	Ser	Lys	Gln	Leu
	290		295		300										
Asn	Ile	Ala	Tyr	Asp	Val	Thr	Tyr	Ser	Leu	Ala	Cys	Val	Arg	Cys	Cys
	305		310		315										
Val	Asn	Pro	Phe	Leu	Tyr	Ala	Phe	Ile	Gly	Val	Lys	Phe	Arg	Asn	Asp
			325		330										
Leu	Phe	Lys	Leu	Phe	Lys	Asp	Leu	Gly	Cys	Leu	Ser	Gln	Glu	Gln	Leu
			340		345										
Arg	Gln	Trp	Ser	Ser	Cys	Arg	His	Ile	Arg	Arg	Ser	Ser	Met	Ser	Val
	355		360		365										
Glu	Ala	Glu	Thr	Thr	Thr	Thr	Phe	Ser	Pro						
	370		375												

<210> 303  
 <211> 1136  
 <212> DNA  
 <213> Homo sapiens

<400> 303  
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 acactttgtt cgagtctttg tgctccaaga aggacgtgcg gaactttaaa gcctgggttcc 180  
 tccctatcat gtactccatc atttgtttcg tgggcctact gggcaatggg ctggtcgtgt 240  
 tgacctatat ctatttcaag aggtcaaga ccatgaccga tacctacctg ctcaacctgg 300  
 cgggtggcaga catcctcttc ctctgaccc ttcccttctg ggctacagc gcggccaagt 360  
 cctgggtctt cgggtgtccac ttttgcaagc tcatctttgc catctacaag atgagcttct 420  
 tcagtggcat gctctactt ctttgcata gcattgaccg ctacgtggcc atcgtccagg 480  
 ctgtctcage tcaccgccac cgtgccgcg tccttctcat cagcaagctg tctgtgtgg 540  
 gcatctggat actagccaca gtgctctcca tcccagact cctgtacagt gacctccaga 600  
 ggagcagcag tgagcaagcg atgcgatgct ctctcatcac agagcatgtg gaggccttta 660  
 tcaccatcca ggtggcccag atggtgatcg gctttctggt cccctgctg gccatgagct 720  
 tctgttacct tgtcatcatc cgcacctgc tccaggcacg caactttgag cgcaacaagg 780  
 ccatcaagggt gatcatcgct gtggtcgtgg tcttcatagt cttccagctg ccctacaatg 840  
 ggggtggtcct ggcccagacg gtggccaact tcaacatcac cagtagcacc tgtgagctca 900  
 gtaagcaact caacatcgcc tacgacgtca cctacagcct ggctgcgtc cgctgctgcg 960  
 tcaacctttt cttgtacgcc ttcacggcg tcaagttccg caacgatctc ttcaagctct 1020  
 tcaaggacct gggctgcctc agccaggagc agctccggca gtggtcttcc tgtcggcaca 1080  
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<210> 304  
 <211> 368  
 <212> PRT  
 <213> Homo sapiens

<400> 304

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Met Val Leu Glu Val Ser Asp His Gln Val Leu Asn Asp Ala Glu Val
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Glu Ser Asp Ser Cys Cys Thr Ser Pro Pro Cys Pro Gln Asp Phe Ser
 35          40          45
Leu Asn Phe Asp Arg Ala Phe Leu Pro Ala Leu Tyr Ser Leu Leu Phe
 50          55          60
Leu Leu Gly Leu Leu Gly Asn Gly Ala Val Ala Ala Val Leu Leu Ser
 65          70          75          80
Arg Arg Thr Ala Leu Ser Ser Thr Asp Thr Phe Leu Leu His Leu Ala
 85          90          95
Val Ala Asp Thr Leu Leu Val Leu Thr Leu Pro Leu Trp Ala Val Asp
 100         105         110
Ala Ala Val Gln Trp Val Phe Gly Ser Gly Leu Cys Lys Val Ala Gly
 115         120         125
Ala Leu Phe Asn Ile Asn Phe Tyr Ala Gly Ala Leu Leu Leu Ala Cys
 130         135         140
Ile Ser Phe Asp Arg Tyr Leu Asn Ile Val His Ala Thr Gln Leu Tyr
 145         150         155         160
Arg Arg Gly Pro Pro Ala Arg Val Thr Leu Thr Cys Leu Ala Val Trp
 165         170         175
Gly Leu Cys Leu Leu Phe Ala Leu Pro Asp Phe Ile Phe Leu Ser Ala
 180         185         190
His His Asp Glu Arg Leu Asn Ala Thr His Cys Gln Tyr Asn Phe Pro
 195         200         205
Gln Val Gly Arg Thr Ala Leu Arg Val Leu Gln Leu Val Ala Gly Phe
 210         215         220
Leu Leu Pro Leu Leu Val Met Ala Tyr Cys Tyr Ala His Ile Leu Ala
 225         230         235         240
Val Leu Leu Val Ser Arg Gly Gln Arg Arg Leu Arg Ala Met Arg Leu
 245         250         255
Val Val Val Val Val Val Ala Phe Ala Leu Cys Trp Thr Pro Tyr His
 260         265         270
Leu Val Val Leu Val Asp Ile Leu Met Asp Leu Gly Ala Leu Ala Arg
 275         280         285
Asn Cys Gly Arg Glu Ser Arg Val Asp Val Ala Lys Ser Val Thr Ser
 290         295         300
Gly Leu Gly Tyr Met His Cys Cys Leu Asn Pro Leu Leu Tyr Ala Phe
 305         310         315         320
Val Gly Val Lys Phe Arg Glu Arg Met Trp Met Leu Leu Leu Arg Leu
 325         330         335
Gly Cys Pro Asn Gln Arg Gly Leu Gln Arg Gln Pro Ser Ser Ser Arg
 340         345         350
Arg Asp Ser Ser Trp Ser Glu Thr Ser Glu Ala Ser Tyr Ser Gly Leu
 355         360         365

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<210> 305

<211> 1670

<212> DNA

<213> Homo sapiens

<400> 305

ccaaccacaa gcaccaaagc agaggggcag gcagcacacc acccagcagc cagagcacca 60

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ccctcctgga gaacttcagc tcttcctatg actatggaga aaacgagagt gactcgtgct 180
gtacctcccc gccctgcccc caggacttca gcctgaactt cgaccggggc ttcttgccag 240
ccctctacag cctcctcttt ctgctggggc tgctgggcaa cggcgcggtg gcagccgtgc 300
tgctgagccg gcgacagcc ctgagcagca ccgacacctt cctgctccac ctactgttag 360
cagacacgct gctggtgctg aactgcccgc tctgggcagt ggacgtgccc gtccagtggg 420
tctttggctc tggcctctgc aaagtggcag gtgccctctt caacatcaac ttctacgcag 480
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tcaacgccac ccactgccaa tacaacttcc cacaggtggg ccgcacggct ctgcggtgac 720
tgacgtggtt ggtggtcttt ctgctgcccc tgctggtcat ggccctactgc tatgccaca 780
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gccccacca gagagggctc cagaggcagc catcgtcttc ccgcgggat tcatcctggt 1140
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tgccgcccga ggtggtgccc tggagcccca ctgcccttct catttggaac ctaaaacttc 1440
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cagcccaggc ctccagctca gcagtgactg tggccatggt cccaagacc tctatatttg 1560
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accaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1670

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<210> 306
<211> 11
<212> DNA
<213> Artificial Sequence

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<220>
<223> THRE consensus sequence

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<221> misc_feature
<222> (1)...(1)
<223> N=A or T

```

```

<221> misc_feature
<222> (2)...(2)
<223> N=G, C or A

```

```

<221> misc_feature
<222> (4)...(4)
<223> N= A or G

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<221> misc_feature
<222> (5)...(5)
<223> N=T, C or A

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<221> misc_feature
<222> (6)...(6)
<223> N= G or T

```

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<221> misc_feature

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<222> (11)...(11)  
 <223> N= A, T, G or C

<400> 306  
 nntnnnggca n 11

<210> 307  
 <211> 11  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> THRE variant one

<400> 307  
 agtaagggca a 11

<210> 308  
 <211> 11  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Mutant THRE

<400> 308  
 agtaatttca a 11

<210> 309  
 <211> 11  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Mutant THRE

<400> 309  
 agtaaggtca a 11

<210> 310  
 <211> 11  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Mutant THRE

<400> 310  
 agtaagtgc a 11

<210> 311  
 <211> 11  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Mutant THRE

<400> 311  
 agtaagggcc a 11

<210> 312  
 <211> 11  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Mutant THRE

<400> 312  
 agtaaggga a 11

<210> 313  
 <211> 25  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Sequence containing THRE variant one

<400> 313  
 agcaagtaag ggcaaactac ttcac 25

<210> 314  
 <211> 25  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Sequence containing THRE mutant

<400> 314  
 agcaagtaat ttcaaactac ttcac 25

<210> 315  
 <211> 319  
 <212> DNA  
 <213> Homo sapiens

<400> 315  
 cgctgctggg tgcaccgga ccacgggcag agccacgcgg cgggaggact acaactccc 60  
 gcacacccc cgccgcccc cctctactcc cagaaggccg cggggggtgg accgcctaag 120  
 agggcgtgcg ctcccgacat gcccgcggc gcgccattaa ccgccagatt tgaatcgcg 180  
 gaccggttgg cagaggtggc ggccggcgca tgggtgcccc gacgttgccc cctgcctggc 240  
 agccctttct caaggaccac cgcctctcta cattcaagaa ctggcccttc ttggagggct 300  
 gcgcctgcac cccggagcg 319

<210> 316  
 <211> 17  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> DR-5-type element

<221> misc\_feature  
 <222> (7)...(7)  
 <223> N=A, T, G, or C

<221> misc\_feature  
 <222> (8)...(8)  
 <223> N=A, T, G, or C

<221> misc\_feature  
 <222> (9)...(9)  
 <223> N=A, T, G, or C

<221> misc\_feature  
 <222> (10)...(10)  
 <223> N=A, T, G, or C

<400> 316  
 gggcaannnn ngggcac 17

<210> 317  
 <211> 600  
 <212> DNA  
 <213> Homo sapiens

<400> 317  
 tggtgccgtg cgctgtagt cccagctact cgggaggctg aggcagaaga atgcactcca 60  
 gcctgggcca cagagggata ttccgtctca aacaaacaaa aaatcactcg ctgcgttttt 120  
 tattctgaca tggtgcagga aggtaaattc aagacaactt aggtactcag ttttagaagt 180  
 cgacaggaca gaattacgga aacaaattta agcggtcccc cttttagctc caaatataat 240  
 gtgttccaga aaggtaacca tctaggaaac tccaaggctc agaccaccac cggatgcccc 300  
 cacttcagga gcatttatat aacttcgtgg ttatgtcaga gacgagaaaa cccattgaca 360  
 accaaacccc taaacccgaa catccggcgc aagccgcacg caggcgcaga tttactagcg 420  
 tcagagccga tggtcccggg aggtgggggt ggggtggtgg tggcctagcc acttcccata 480  
 atgccgcgtt ccggaagtta ttgctttcca ggggtcactc tggcttcgac tccgtcgctc 540  
 tcaattcgctc accaggagga agacggagct ggctgccag cccaaaggcc catgagggga 600

<210> 318  
 <211> 11  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> THRE-type element

<400> 318  
 agtgtgggca t 11

<210> 319  
 <211> 25  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Sequence containing THRE mutant

<400> 319  
agcaagtaag gtcaaactac ttcac 25

<210> 320  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Sequence containing THRE mutant

<400> 320  
agcaagtaag tgcaaactac ttcac 25

<210> 321  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Sequence containing THRE mutant

<400> 321  
agcaagtaag ggccaactac ttcac 25

<210> 322  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Sequence containing THRE mutant

<400> 322  
agcaagtaag ggaaaactac ttcac 25

<210> 323  
<211> 94  
<212> PRT  
<213> Homo sapiens

<400> 323  
Met Ser Val Lys Gly Met Ala Ile Ala Leu Ala Val Ile Leu Cys Ala  
1 5 10 15  
Thr Val Val Gln Gly Phe Pro Met Phe Lys Arg Gly Arg Cys Leu Cys  
20 25 30  
Ile Gly Pro Gly Val Lys Ala Val Lys Val Ala Asp Ile Glu Lys Ala  
35 40 45  
Ser Ile Met Tyr Pro Ser Asn Asn Cys Asp Lys Ile Glu Val Ile Ile  
50 55 60  
Thr Leu Lys Glu Asn Lys Gly Gln Arg Cys Leu Asn Pro Lys Ser Lys  
65 70 75 80  
Gln Ala Arg Leu Ile Lys Lys Val Glu Arg Lys Asn Phe  
85 90

<210> 324

<211> 1493  
 <212> DNA  
 <213> Homo sapiens

<400> 324  
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 caacagcacc agcagcaaca gcaaaaaaca aacatgagtg tgaagggcat ggctatagcc 120  
 ttggctgtga tattgtgtgc tacagttgtt caaggcttcc ccattgttcaa aagaggacgc 180  
 tgtctttgca taggccctgg ggtaaaagca gtgaaagtgg cagatattga gaaagcctcc 240  
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 <210> 332  
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<223> Primer

<400> 332  
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<220>  
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<400> 333  
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<220>  
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<400> 334  
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<400> 335  
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 <211> 142  
 <212> PRT  
 <213> Homo sapiens

<400> 343  
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 Cys Thr Pro Glu Arg Met Ala Glu Ala Gly Phe Ile His Cys Pro Thr  
 35 40 45  
 Glu Asn Glu Pro Asp Leu Ala Gln Cys Phe Phe Cys Phe Lys Glu Leu  
 50 55 60  
 Glu Gly Trp Glu Pro Asp Asp Asp Pro Ile Glu Glu His Lys Lys His  
 65 70 75 80  
 Ser Ser Gly Cys Ala Phe Leu Ser Val Lys Lys Gln Phe Glu Glu Leu  
 85 90 95  
 Thr Leu Gly Glu Phe Leu Lys Leu Asp Arg Glu Arg Ala Lys Asn Lys  
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 Ile Ala Lys Glu Thr Asn Asn Lys Lys Lys Glu Phe Glu Glu Thr Ala  
 115 120 125  
 Lys Lys Val Arg Arg Ala Ile Glu Gln Leu Ala Ala Met Asp  
 130 135 140

<210> 344  
 <211> 1619  
 <212> DNA  
 <213> Homo sapiens

<400> 344  
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 ccaactgccc actgagaacg agccagactt ggcccagtggt ttcttctgct tcaaggagct 240  
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 <212> PRT  
 <213> Homo sapiens

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 20 25 30  
 Lys Ala Leu Asp Gly Arg Ser Gln Val Ser Thr Pro Arg Phe Gly Lys  
 35 40 45  
 Thr Phe Asp Ala Pro Pro Ala Leu Pro Lys Ala Thr Arg Lys Ala Leu  
 50 55 60  
 Gly Thr Val Asn Arg Ala Thr Glu Lys Ser Val Lys Thr Lys Gly Pro  
 65 70 75 80  
 Leu Lys Gln Lys Gln Pro Ser Phe Ser Ala Lys Lys Met Thr Glu Lys  
 85 90 95  
 Thr Val Lys Ala Lys Ser Ser Val Pro Ala Ser Asp Asp Ala Tyr Pro  
 100 105 110  
 Glu Ile Glu Lys Phe Phe Pro Phe Asn Pro Leu Asp Phe Glu Ser Phe  
 115 120 125  
 Asp Leu Pro Glu Glu His Gln Ile Ala His Leu Pro Leu Ser Gly Val  
 130 135 140  
 Pro Leu Met Ile Leu Asp Glu Glu Arg Glu Leu Glu Lys Leu Phe Gln  
 145 150 155 160  
 Leu Gly Pro Pro Ser Pro Val Lys Met Pro Ser Pro Pro Trp Glu Ser  
 165 170 175  
 Asn Leu Leu Gln Ser Pro Ser Ser Ile Leu Ser Thr Leu Asp Val Glu  
 180 185 190  
 Leu Pro Pro Val Cys Cys Asp Ile Asp Ile  
 195 200

<210> 346  
 <211> 727  
 <212> DNA  
 <213> Homo sapiens

<400> 346  
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 ctgtcaacag agctacagaa aagtctgtaa agaccaaggg acccctcaaa caaaaacagc 300  
 caagcttttc tgccaaaaag atgactgaga agactgttaa agcaaaaagc tctgttctctg 360  
 cctcagatga tgccatcca gaaatagaaa aattctttcc cttcaatcct ctgacttttg 420  
 agagttttga cctgcctgaa gagcaccaga ttgcgcacct ccccttgagt ggagtgcctc 480  
 tcatgatcct tgacgaggag agagagcttg aaaagctgtt tcagctgggc ccccttcac 540  
 ctgtgaagat gccctctcca ccatgggaat ccaatctgtt gcagtctcct tcaagcattc 600  
 tgtcgacctt ggatgttgaa ttgccacctg tttgtctgtg catagatatt taaatttctt 660  
 agtgcttcag agtttgtgtg tatttgtatt aataaagcat tcttcaacag aaaaaaaaaa 720  
 aaaaaaa 727

<210> 347  
 <211> 79  
 <212> PRT  
 <213> Homo sapiens

<400> 347  
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 Phe Glu Tyr Arg His Val Met Leu Pro Lys Asp Ile Ala Lys Leu Val  
 20 25 30  
 Pro Lys Thr His Leu Met Ser Glu Ser Glu Trp Arg Asn Leu Gly Val  
 35 40 45  
 Gln Gln Ser Gln Gly Trp Val His Tyr Met Ile His Glu Pro Glu Pro  
 50 55 60  
 His Ile Leu Leu Phe Arg Arg Pro Leu Pro Lys Lys Pro Lys Lys  
 65 70 75

<210> 348  
 <211> 717  
 <212> DNA  
 <213> Homo sapiens

<400> 348  
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 atgtctgaat ctgaatggag gaatcttggc gttcagcaga gtcagggatg ggtccattat 180  
 atgatccatg aaccagaacc tcacatcttg ctgttcgggc gccactacc caagaaacca 240  
 aagaaatgaa gctggcaagc tacttttcag cctcaagctt tacacagctg tccttacttc 300  
 ctaacatctt tctgataaca ttattatggt gccttcttgt ttctcacttt gatattttaa 360  
 agatgttcaa tacactgttt gaatgtgctg gtaactgctt tgcttcttga gtagagccac 420  
 caccaccata gccagccag atgagtgtc tgtggacca cagcctaagc tgagtgtgac 480  
 ccagaagcc acgatgtgct ctgtatccag aacacacttg gcagatggag gaagcatctg 540  
 agtttgagac catggctgtt acagggatca tgtaaacttg ctgtttttgt tttttctgcc 600  
 ggggtgttga tgtgtggtga cttgctggatt tatgtttcag tgtactggaa actttccatt 660  
 ttattcaaga aatctgttca tgttaaaagc cttgattaaa gaggaagttt ttataat 717

<210> 349  
 <211> 205  
 <212> PRT  
 <213> Homo sapiens

<400> 349  
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 20 25 30  
 Tyr Gln Arg Gly Ile Tyr Pro Ser Glu Thr Phe Thr Arg Val Gln Lys  
 35 40 45  
 Tyr Gly Leu Thr Leu Leu Val Thr Thr Asp Leu Glu Leu Ile Lys Tyr  
 50 55 60  
 Leu Asn Asn Val Val Glu Gln Leu Lys Asp Trp Leu Tyr Lys Cys Ser  
 65 70 75 80  
 Val Gln Lys Leu Val Val Val Ile Ser Asn Ile Glu Ser Gly Glu Val  
 85 90 95  
 Leu Glu Arg Trp Gln Phe Asp Ile Glu Cys Asp Lys Thr Ala Lys Asp



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Thr	Glu	Glu	Lys	Pro	Ser	Val	Trp	Leu	Cys	Leu	Lys	Cys	Gly	His	Gln
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Gly	Cys	Gly	Arg	Asn	Ser	Gln	Glu	Gln	His	Ala	Leu	Lys	His	Tyr	Leu
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Thr	Pro	Arg	Ser	Glu	Pro	His	Cys	Leu	Val	Leu	Ser	Leu	Asp	Asn	Trp
			100					105					110		
Ser	Val	Trp	Cys	Tyr	Val	Cys	Asp	Asn	Glu	Val	Gln	Tyr	Cys	Ser	Ser
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Asn	Gln	Leu	Gly	Gln	Val	Val	Asp	Tyr	Val	Arg	Lys	Gln	Ala	Ser	Ile
130						135					140				
Thr	Thr	Pro	Lys	Pro	Ala	Glu	Lys	Asp	Asn	Gly	Asn	Ile	Glu	Leu	Glu
145					150					155					160
Asn	Lys	Lys	Leu	Glu	Lys	Glu	Ser	Lys	Asn	Glu	Gln	Glu	Arg	Glu	Lys
			165						170					175	
Lys	Glu	Asn	Met	Ala	Lys	Glu	Asn	Pro	Pro	Met	Asn	Ser	Pro	Cys	Gln
		180						185					190		
Ile	Thr	Val	Lys	Gly	Leu	Ser	Asn	Leu	Gly	Asn	Thr	Cys	Phe	Phe	Asn
	195						200					205			
Ala	Val	Met	Gln	Asn	Leu	Ser	Gln	Thr	Pro	Val	Leu	Arg	Glu	Leu	Leu
210						215					220				
Lys	Glu	Val	Lys	Met	Ser	Gly	Thr	Ile	Val	Lys	Ile	Glu	Pro	Pro	Asp
225					230					235					240
Leu	Ala	Leu	Thr	Glu	Pro	Leu	Glu	Ile	Asn	Leu	Glu	Pro	Pro	Gly	Pro
			245						250					255	
Leu	Thr	Leu	Ala	Met	Ser	Gln	Phe	Leu	Asn	Glu	Met	Gln	Glu	Thr	Lys
		260						265					270		
Lys	Gly	Val	Val	Thr	Pro	Lys	Glu	Leu	Phe	Ser	Gln	Val	Cys	Lys	Lys
	275						280					285			
Ala	Val	Arg	Phe	Lys	Gly	Tyr	Gln	Gln	Gln	Asp	Ser	Gln	Glu	Leu	Leu
290						295					300				
Arg	Tyr	Leu	Leu	Asp	Gly	Met	Arg	Ala	Glu	Glu	His	Gln	Arg	Val	Ser
305					310					315					320
Lys	Gly	Ile	Leu	Lys	Ala	Phe	Gly	Asn	Ser	Thr	Glu	Lys	Leu	Asp	Glu
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Glu	Leu	Lys	Asn	Lys	Val	Lys	Asp	Tyr	Glu	Lys	Lys	Lys	Ser	Met	Pro
		340					345					350			
Ser	Phe	Val	Asp	Arg	Ile	Phe	Gly	Glu	Leu	Thr	Ser	Met	Ile	Met	
	355						360				365				
Cys	Asp	Gln	Cys	Arg	Thr	Val	Ser	Leu	Val	His	Glu	Ser	Phe	Leu	Asp
370						375					380				
Leu	Ser	Leu	Pro	Val	Leu	Asp	Asp	Gln	Ser	Gly	Lys	Lys	Ser	Val	Asn
385					390					395					400
Asp	Lys	Asn	Leu	Lys	Lys	Thr	Val	Glu	Asp	Glu	Asp	Gln	Asp	Ser	Glu
			405						410					415	
Glu	Glu	Lys	Asp	Asn	Asp	Ser	Tyr	Ile	Lys	Glu	Arg	Ser	Asp	Ile	Pro
		420						425					430		
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	435						440					445			
Lys	Gln	Ala	Lys	Asn	Gln	Arg	Arg	Gln	Gln	Lys	Ile	Gln	Gly	Lys	Val
450						455					460				
Leu	His	Leu	Asn	Asp	Ile	Cys	Thr	Ile	Asp	His	Pro	Glu	Asp	Ser	Glu
465					470					475					480
Tyr	Glu	Ala	Glu	Met	Ser	Leu	Gln	Gly	Glu	Val	Asn	Ile	Lys	Ser	Asn
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His Ile Ser Gln Glu Gly Val Met His Lys Glu Tyr Cys Val Asn Gln  
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 Lys Asp Leu Asn Gly Gln Ala Lys Met Ile Glu Ser Val Thr Asp Asn  
 515 520 525  
 Gln Lys Ser Thr Glu Glu Val Asp Met Lys Asn Ile Asn Met Asp Asn  
 530 535 540  
 Asp Leu Glu Val Leu Thr Ser Ser Pro Thr Arg Asn Leu Asn Gly Ala  
 545 550 555 560  
 Tyr Leu Thr Glu Gly Ser Asn Gly Glu Val Asp Ile Ser Asn Gly Phe  
 565 570 575  
 Lys Asn Leu Asn Leu Asn Ala Ala Leu His Pro Asp Glu Ile Asn Ile  
 580 585 590  
 Glu Ile Leu Asn Asp Ser His Thr Pro Gly Thr Lys Val Tyr Glu Val  
 595 600 605  
 Val Asn Glu Asp Pro Glu Thr Ala Phe Cys Thr Leu Ala Asn Arg Glu  
 610 615 620  
 Val Phe Asn Thr Asp Glu Cys Ser Ile Gln His Cys Leu Tyr Gln Phe  
 625 630 635 640  
 Thr Arg Asn Glu Lys Leu Arg Asp Ala Asn Lys Leu Leu Cys Glu Val  
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 Cys Thr Arg Arg Gln Cys Asn Gly Pro Lys Ala Asn Ile Lys Gly Glu  
 660 665 670  
 Arg Lys His Val Tyr Thr Asn Ala Lys Lys Gln Met Leu Ile Ser Leu  
 675 680 685  
 Ala Pro Pro Val Leu Thr Leu His Leu Lys Arg Phe Gln Gln Ala Gly  
 690 695 700  
 Phe Asn Leu Arg Lys Val Asn Lys His Ile Lys Phe Pro Glu Ile Leu  
 705 710 715 720  
 Asp Leu Ala Pro Phe Cys Thr Leu Lys Cys Lys Asn Val Ala Glu Glu  
 725 730 735  
 Asn Thr Arg Val Leu Tyr Ser Leu Tyr Gly Val Val Glu His Ser Gly  
 740 745 750  
 Thr Met Arg Ser Gly His Tyr Thr Ala Tyr Ala Lys Ala Arg Thr Ala  
 755 760 765  
 Asn Ser His Leu Ser Asn Leu Val Leu His Gly Asp Ile Pro Gln Asp  
 770 775 780  
 Phe Glu Met Glu Ser Lys Gly Gln Trp Phe His Ile Ser Asp Thr His  
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<210> 352  
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 <212> DNA  
 <213> Homo sapiens

<400> 352  
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 gtgccaacat gggaaagaaa cggacaaagg gaaaaactgt tccaatcgat gattcctctg 180  
 aaactttaga acctgtgtgc agacacatta gaaaaggatt ggaacaagggt aatttgaaaa 240  
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 aagataaagc tgaagaagaa acagaagaaa agccttcagt ttggctgtgt cttaaagtgt 360  
 gccatcaggg ctgtggcaga aattctcagg agcagcatgc cttgaagcac tatctgacgc 420

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caagatctga acctcactgt ctgggttctta gtttggacaa ctggagtgtg tgggtgttacg 480
tatgtgataa tgaggtccag tattgtagtt caaaccagtt ggggtcaagt gttgattatg 540
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 <213> Homo sapiens

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 Glu Ser Lys Gln Asn Leu Asn Val Asp Lys Asp Thr Thr Leu Pro Ala  
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Met Glu Gln Thr Lys Ile Asp Asn Glu Ser Asp Val Arg Ala Ile Arg

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 <212> DNA  
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agaagttgat gagtctcaag caacaaaaga aattttggca caaaaatgta aaacttactc 1320
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ttggcatgaa gaacatgttt taaataaaaa tgaagctact actaaaaatt taaatggcct 1440
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tggtgtgcca tatttcagaa atatcctcca gtcagaaact gagaaattaa cttcacattg 1560
cttcgagtgg gacaggaaac ttgaattgga cattccagat gatgctaaag atcttattcg 1620
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aagaattgca gcgagaaatc gcctagctgc cataaaaaat gcaatgagag agagaattag 1980
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ttgaaatttt ggagaaaatg tatttgtgtt cacttctata gcatataatg ttttaattt 2880
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<210> 357  
 <211> 191  
 <212> PRT  
 <213> Homo sapiens

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<400> 357
Met Ala Thr Leu Ile Tyr Val Asp Lys Glu Ile Gly Glu Pro Gly Thr
 1          5          10          15
Arg Val Ala Ala Lys Asp Val Leu Lys Leu Glu Ser Arg Pro Ser Ile
      20          25          30
Lys Ala Leu Asp Gly Ile Ser Gln Val Leu Thr Pro Arg Phe Gly Lys
      35          40          45
Thr Tyr Asp Ala Pro Ser Ala Leu Pro Lys Ala Thr Arg Lys Ala Leu
      50          55          60
Gly Thr Val Asn Arg Ala Thr Glu Lys Ser Val Lys Thr Asn Gly Pro
 65          70          75          80
Arg Lys Gln Lys Gln Pro Ser Phe Ser Ala Lys Lys Met Thr Glu Lys
      85          90          95
Thr Val Lys Thr Lys Ser Ser Val Pro Ala Ser Asp Asp Ala Tyr Pro
      100          105          110
Glu Ile Glu Lys Phe Phe Pro Phe Asn Leu Leu Asp Phe Glu Ser Phe
      115          120          125
Asp Leu Pro Glu Glu Arg Gln Ile Ala His Leu Pro Leu Ser Gly Val
      130          135          140
Pro Leu Met Ile Leu Asp Glu Glu Gly Glu Leu Glu Lys Leu Phe Gln
 145          150          155          160
Leu Gly Pro Pro Ser Pro Val Lys Met Pro Ser Pro Pro Trp Glu Cys

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	165		170		175									
Asn	Leu	Phe	Ala	Val	Ser	Phe	Lys	His	Ser	Val	Asp	Pro	Gly	Cys
	180						185						190	

<210> 358  
 <211> 576  
 <212> DNA  
 <213> Homo sapiens

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 gttttaacac cacgttttgg caaaacatac gatgtccat cagccttacc taaagctacc 180  
 agaaaggctt tgggcactgt caacagagct acagaaaagt cagtaaagac caatggaccc 240  
 agaaaacaaa aacagccaag cttttctgcc aaaaagatga ccgagaagac tgttaaaaca 300  
 aaaagttctg ttcctgcctc agatgacgcc tatccagaaa tagaaaaatt ctttcccttc 360  
 aatcttctag actttgagag ttttgacctg cctgaagagc gccagattgc acacctcccc 420  
 ttgagtggag tgcctctcat gatccttgat gaggagggag agcttgaaaa gctgtttcag 480  
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 gtctccttca agcattctgt cgacctgga tgttga 576

<210> 359  
 <211> 202  
 <212> PRT  
 <213> Homo sapiens

<400> 359  
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 1 5 10 15  
 Leu Val Ala Thr Lys Asp Gly Leu Lys Leu Gly Ser Gly Pro Ser Ile  
 20 25 30  
 Lys Ala Leu Asp Gly Arg Ser Gln Val Ser Ile Ser Cys Phe Gly Lys  
 35 40 45  
 Thr Phe Asp Ala Pro Thr Ser Leu Pro Lys Ala Thr Arg Lys Ala Leu  
 50 55 60  
 Gly Thr Val Asn Arg Ala Thr Glu Lys Ser Val Lys Thr Asn Gly Pro  
 65 70 75 80  
 Leu Lys Gln Lys Gln Pro Ser Phe Ser Ala Lys Lys Met Thr Glu Lys  
 85 90 95  
 Thr Val Lys Ala Lys Asn Ser Val Pro Ala Ser Asp Asp Gly Tyr Pro  
 100 105 110  
 Glu Ile Glu Lys Leu Phe Pro Phe Asn Pro Leu Gly Phe Glu Ser Phe  
 115 120 125  
 Asp Leu Pro Glu Glu His Gln Ile Ala His Leu Pro Leu Ser Glu Val  
 130 135 140  
 Pro Leu Met Ile Leu Asp Glu Glu Arg Glu Leu Glu Lys Leu Phe Gln  
 145 150 155 160  
 Leu Gly Pro Pro Ser Pro Leu Lys Met Pro Ser Pro Pro Trp Lys Ser  
 165 170 175  
 Asn Leu Leu Gln Ser Pro Leu Ser Ile Leu Leu Thr Leu Asp Val Glu  
 180 185 190  
 Leu Pro Pro Val Cys Cys Asp Ile Asp Ile  
 195 200

<210> 360

<211> 609  
 <212> DNA  
 <213> Homo sapiens

<400> 360  
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 gtttcaatat catgttttgg caaacatttc gatgctccca catccttacc taaagctacc 180  
 agaaaggctt tgggaactgt caacagagct acagaaaagt cagtaaagac caatggaccc 240  
 ctcaaacaaa aacagccaag cttttctgcc aaaaagatga ctgagaagac tgttaaagca 300  
 aaaaactctg ttctgcctc agatgatggc tatccagaaa tagaaaaatt atttccttc 360  
 aatcctctag gcttcgagag ttttgacctg cctgaagagc accagattgc acatctcccc 420  
 ttgagtgaag tgctctcat gatacttgat gaggagagag agcttgaaaa gctgtttcag 480  
 ctgggcccc cttcaccttt gaagatgccc tctccaccat ggaaatccaa tctgttgcag 540  
 tctcctttaa gcattctgtt gacctggat gttgaattgc cacctgtttg ctgtgacata 600  
 gatatttaa 609

<210> 361  
 <211> 450  
 <212> PRT  
 <213> Homo sapiens

<400> 361  
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 1 5 10 15  
 Leu Lys Lys Phe Arg Tyr Val Lys Leu Ile Ser Met Glu Thr Ser Ser  
 20 25 30  
 Ser Ser Asp Asp Ser Cys Asp Ser Phe Ala Ser Asp Asn Phe Ala Asn  
 35 40 45  
 Thr Lys Pro Lys Phe Arg Ser Asp Ile Ser Glu Glu Leu Ala Ser Val  
 50 55 60  
 Phe Tyr Glu Asp Ser Asp Asn Glu Ser Phe Cys Gly Phe Ser Glu Ser  
 65 70 75 80  
 Glu Val Gln Asp Val Leu Asp His Cys Gly Phe Leu Gln Lys Pro Arg  
 85 90 95  
 Pro Asp Val Thr Asn Glu Leu Ala Gly Ile Phe His Ala Asp Ser Asp  
 100 105 110  
 Asp Glu Ser Phe Cys Gly Phe Ser Glu Ser Glu Ile Gln Asp Gly Met  
 115 120 125  
 Arg Leu Gln Ser Val Arg Glu Gly Cys Arg Thr Arg Ser Gln Cys Arg  
 130 135 140  
 His Ser Gly Pro Leu Arg Val Ala Met Lys Phe Pro Ala Arg Ser Thr  
 145 150 155 160  
 Arg Gly Ala Thr Asn Lys Lys Ala Glu Ser Arg Gln Pro Ser Glu Asn  
 165 170 175  
 Ser Val Thr Asp Ser Asn Ser Asp Ser Glu Asp Glu Ser Gly Met Asn  
 180 185 190  
 Phe Leu Glu Lys Arg Ala Leu Asn Ile Lys Gln Asn Lys Ala Met Leu  
 195 200 205  
 Ala Lys Leu Met Ser Glu Leu Glu Ser Phe Pro Gly Ser Phe Arg Gly  
 210 215 220  
 Arg His Pro Leu Pro Gly Ser Asp Ser Gln Ser Arg Arg Pro Arg Arg  
 225 230 235 240  
 Arg Thr Phe Pro Gly Val Ala Ser Arg Arg Asn Pro Glu Arg Arg Ala  
 245 250 255  
 Arg Pro Leu Thr Arg Ser Arg Ser Arg Ile Leu Gly Ser Leu Asp Ala  
 260 265 270

Leu Pro Met Glu Glu Glu Glu Glu Glu Asp Lys Tyr Met Leu Val Arg  
 275 280 285  
 Lys Arg Lys Thr Val Asp Gly Tyr Met Asn Glu Asp Asp Leu Pro Arg  
 290 295 300  
 Ser Arg Arg Ser Arg Ser Ser Val Thr Leu Pro His Ile Ile Arg Pro  
 305 310 315 320  
 Val Glu Glu Ile Thr Glu Glu Glu Leu Glu Asn Val Cys Ser Asn Ser  
 325 330 335  
 Arg Glu Lys Ile Tyr Asn Arg Ser Leu Gly Ser Thr Cys His Gln Cys  
 340 345 350  
 Arg Gln Lys Thr Ile Asp Thr Lys Thr Asn Cys Arg Asn Pro Asp Cys  
 355 360 365  
 Trp Gly Val Arg Gly Gln Phe Cys Gly Pro Cys Leu Arg Asn Arg Tyr  
 370 375 380  
 Gly Glu Glu Val Arg Asp Ala Leu Leu Asp Pro Asn Trp His Cys Pro  
 385 390 395 400  
 Pro Cys Arg Gly Ile Cys Asn Cys Ser Phe Cys Arg Gln Arg Asp Gly  
 405 410 415  
 Arg Cys Ala Thr Gly Val Leu Val Tyr Leu Ala Lys Tyr His Gly Phe  
 420 425 430  
 Gly Asn Val His Ala Tyr Leu Lys Ser Leu Lys Gln Glu Phe Glu Met  
 435 440 445  
 Gln Ala  
 450

<210> 362  
 <211> 2824  
 <212> DNA  
 <213> Homo sapiens

<400> 362  
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 ccgatctggg caccgcgcc cagcatggac gctcgccgcg tgccgcagaa agatctcaga 180  
 gtaaagaaga acttaaagaa attcagatat gtgaagttga ttccatgga aacctcgtca 240  
 tcctctgatg acagttgtga cagctttgct tctgataatt ttgcaaacac gaaacctaaa 300  
 ttcagggtcag atatcagtga agaactggca agtgtttttt atgaggactc tgataatgaa 360  
 tctttctgcg gcttttcaga aagtgagggt caagatgtat tagaccattg tggattttta 420  
 cagaaaccaa ggcagatgt cactaacgaa ctggccggta ttttcatgc cgactctgac 480  
 gatgaatcat ttgctggttt ctcagagagt gagatacaag atggaatgag gctgcagtca 540  
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 atgaagtttc cagcgcgagg taccagggga gcaaccaaca aaaaagcaga gtcccgccag 660  
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 cagcgagatg gacggtgtgc gactggggtc cttgtgtatt tagccaaata tcatggcttt 1440  
 ggaatgtgc atgcctactt gaaaagcctg aaacaggaat ttgaaatgca agcataatat 1500



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gtttacacaa aaacgagtat gatttagcat tcatactagt tgaaattttt aatagaatca 1980
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<210> 363  
 <211> 371  
 <212> PRT  
 <213> Homo sapiens

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<400> 363
Met Asp Ala Arg Arg Val Pro Gln Lys Asp Leu Arg Val Lys Lys Asn
 1          5          10          15
Leu Lys Lys Phe Arg Tyr Val Lys Leu Ile Ser Met Glu Thr Ser Ser
 20          25          30
Ser Ser Asp Asp Ser Cys Asp Ser Phe Ala Ser Asp Asn Phe Ala Asn
 35          40          45
Thr Arg Leu Gln Ser Val Arg Glu Gly Cys Arg Thr Arg Ser Gln Cys
 50          55          60
Arg His Ser Gly Pro Leu Arg Val Ala Met Lys Phe Pro Ala Arg Ser
 65          70          75          80
Thr Arg Gly Ala Thr Asn Lys Lys Ala Glu Ser Arg Gln Pro Ser Glu
 85          90          95
Asn Ser Val Thr Asp Ser Asn Ser Asp Ser Glu Asp Glu Ser Gly Met
100          105          110
Asn Phe Leu Glu Lys Arg Ala Leu Asn Ile Lys Gln Asn Lys Ala Met
115          120          125
Leu Ala Lys Leu Met Ser Glu Leu Glu Ser Phe Pro Gly Ser Phe Arg
130          135          140
Gly Arg His Pro Leu Pro Gly Ser Asp Ser Gln Ser Arg Arg Pro Arg
145          150          155          160
Arg Arg Thr Phe Pro Gly Val Ala Ser Arg Arg Asn Pro Glu Arg Arg
165          170          175
Ala Arg Pro Leu Thr Arg Ser Arg Ser Arg Ile Leu Gly Ser Leu Asp
180          185          190
Ala Leu Pro Met Glu Glu Glu Glu Glu Asp Lys Tyr Met Leu Val
195          200          205
Arg Lys Arg Lys Thr Val Asp Gly Tyr Met Asn Glu Asp Asp Leu Pro

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210		215		220
Arg Ser Arg Arg Ser	Arg Ser Ser Val Thr Leu	Pro His Ile Ile Arg		
225	230	235	240	
Pro Val Glu Glu Ile	Thr Glu Glu Glu Leu Glu	Asn Val Cys Ser Asn		
	245	250	255	
Ser Arg Glu Lys Ile	Tyr Asn Arg Ser Leu Gly	Ser Thr Cys His Gln		
	260	265	270	
Cys Arg Gln Lys Thr	Ile Asp Thr Lys Thr Asn	Cys Arg Asn Pro Asp		
	275	280	285	
Cys Trp Gly Val Arg	Gly Gln Phe Cys Gly Pro	Cys Leu Arg Asn Arg		
	290	295	300	
Tyr Gly Glu Glu Val	Arg Asp Ala Leu Leu Asp	Pro Asn Trp His Cys		
305	310	315	320	
Pro Pro Cys Arg Gly	Ile Cys Asn Cys Ser Phe	Cys Arg Gln Arg Asp		
	325	330	335	
Gly Arg Cys Ala Thr	Gly Val Leu Val Tyr Leu	Ala Lys Tyr His Gly		
	340	345	350	
Phe Gly Asn Val His	Ala Tyr Leu Lys Ser Leu	Lys Gln Glu Phe Glu		
	355	360	365	
Met Gln Ala				
370				

<210> 364  
 <211> 2587  
 <212> DNA  
 <213> Homo sapiens

<400> 364  
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 ccgatctggg caccgcccac cagcatggac gctcgccgcg tgccgcagaa agatctcaga 180  
 gtaaagaaga acttaaagaa attcagatat gtgaagttga tttccatgga aacctcgtca 240  
 tcctctgatg acagttgtga cagctttgct totgataatt ttgcaaacac gaggctgcag 300  
 tcagttcggg aaggctgtag gaccgcagc cagtgcaggc actctggacc tctcaggggtg 360  
 gcgatgaagt ttccagcgcg gactaccagg ggagcaacca acaaaaaagc agagtccccg 420  
 cagccctcag agaattctgt gactgattcc aactccgatt cagaagatga aagtggaaatg 480  
 aattttttgg agaaaagggc tttaaataata aagcaaaaca aagcaatgct tgcaaaactc 540  
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 tatgaaagca tattttattt acttggtgtt gaaatagccc tcataaaacc taagcacttg 1620  
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cttgtttaca caaaaacgag tatgatttag cattcatact agttgaaatt tttaatagaa 1740
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ctctcaatcc catgtattgc gcttatgtta caagttgttg tcacagttga gacttaattt 1860
ctcctaattt cttctgcccg aagggttaagt ggtgcgtcca gcttacacaa tcataattca 1920
aaggttggtg ggcaatgtaa tacttaatta aaataatgat ggaagagcta tctggagatt 1980
atgagtaagc tgatttgaat tttcagtata aaacttttagt ataattgtag tttgcaaagt 2040
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caaggttcaa gtttagattt taagcacttt tataacaatg ataagtgcct ttttgagat 2220
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tatacaaaag tttattttta taataaaatg tttgttctaa cttgtctgct tttttaaaaa 2520
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cttttct
2587

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<210> 365
<211> 709
<212> PRT
<213> Homo sapiens

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<400> 365
Met Ser Phe Pro Lys Ala Pro Leu Lys Arg Phe Asn Asp Pro Ser Gly
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Cys Ala Pro Ser Pro Gly Ala Tyr Asp Val Lys Thr Leu Glu Val Leu
 20          25          30
Lys Gly Pro Val Ser Phe Gln Lys Ser Gln Arg Phe Lys Gln Gln Lys
 35          40          45
Glu Ser Lys Gln Asn Leu Asn Val Asp Lys Asp Thr Thr Leu Pro Ala
 50          55          60
Ser Ala Arg Lys Val Lys Ser Ser Glu Ser Lys Ile Arg Val Leu Leu
 65          70          75          80
Gln Glu Arg Gly Ala Gln Asp Ser Arg Ile Gln Asp Leu Glu Thr Glu
 85          90          95
Leu Glu Lys Met Glu Ala Arg Leu Asn Ala Ala Leu Arg Glu Lys Thr
100          105          110
Ser Leu Ser Ala Asn Asn Ala Thr Leu Glu Lys Gln Leu Ile Glu Leu
115          120          125
Thr Arg Thr Asn Glu Leu Leu Lys Ser Lys Phe Ser Glu Asn Gly Asn
130          135          140
Gln Lys Asn Leu Arg Ile Leu Ser Leu Glu Leu Met Lys Leu Arg Asn
145          150          155          160
Lys Arg Glu Thr Lys Met Arg Gly Met Met Ala Lys Gln Glu Gly Met
165          170          175
Glu Met Lys Leu Gln Val Thr Gln Arg Ser Leu Glu Glu Ser Gln Gly
180          185          190
Lys Ile Ala Gln Leu Glu Gly Lys Leu Val Ser Ile Glu Lys Glu Lys
195          200          205
Ile Asp Glu Lys Ser Glu Thr Glu Lys Leu Leu Glu Tyr Ile Glu Glu
210          215          220
Ile Ser Cys Ala Ser Asp Gln Val Glu Lys Tyr Lys Leu Asp Ile Ala
225          230          235          240
Gln Leu Glu Glu Asn Leu Lys Glu Lys Asn Asp Glu Ile Leu Ser Leu
245          250          255
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 Ala Ala His Thr Gln Ala Thr Leu Leu Leu Gln Glu Lys Tyr Asp Ser  
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<210> 366  
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 <212> DNA  
 <213> Homo sapiens

<400> 366

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2957

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 <213> Homo sapiens

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 35 40 45  
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 50 55 60  
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 <211> 717  
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 ggggtgttga tgtgtggtga cttgocggatt tatgtttcag tgtactggaa actttccatt 660  
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 <212> PRT  
 <213> Homo sapiens

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 35 40 45  
 Thr Tyr Asp Ala Pro Ser Ala Leu Pro Lys Ala Thr Arg Lys Ala Leu  
 50 55 60  
 Gly Thr Val Asn Arg Ala Thr Glu Lys Ser Val Lys Thr Asn Gly Pro  
 65 70 75 80  
 Arg Lys Gln Lys Gln Pro Ser Phe Ser Ala Lys Lys Met Thr Glu Lys  
 85 90 95  
 Thr Val Lys Thr Lys Ser Ser Val Pro Ala Ser Asp Asp Ala Tyr Pro

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Glu Ile Glu Lys Phe Phe Pro Phe Asn Leu Leu Asp Phe Glu Ser Phe					
115			120		125
Asp Leu Pro Glu Glu Arg Gln Ile Ala His Leu Pro Leu Ser Gly Val					
130			135		140
Pro Leu Met Ile Leu Asp Glu Glu Gly Glu Leu Glu Lys Leu Phe Gln					
145			150		155
Leu Gly Pro Pro Ser Pro Val Lys Met Pro Ser Pro Pro Trp Glu Cys					
	165		170		175
Asn Leu Phe Ala Val Ser Phe Lys His Ser Val Asp Pro Gly Cys					
	180		185		190

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 <213> Homo sapiens

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 <211> 212  
 <212> PRT  
 <213> Homo sapiens

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 Ser Leu Ser Arg Val Asn Cys Ser Gln Phe Leu Gly Leu Cys Ala Leu  
 35 40 45  
 Pro Gly Cys Lys Phe Lys Asp Val Arg Arg Asn Val Gln Lys Asp Thr  
 50 55 60  
 Glu Glu Leu Lys Ser Cys Gly Ile Gln Asp Ile Phe Val Phe Cys Thr  
 65 70 75 80  
 Arg Gly Glu Leu Ser Lys Tyr Arg Val Pro Asn Leu Leu Asp Leu Tyr  
 85 90 95  
 Gln Gln Cys Gly Ile Ile Thr His His His Pro Ile Ala Asp Gly Gly  
 100 105 110  
 Thr Pro Asp Ile Ala Ser Cys Cys Glu Ile Met Glu Glu Leu Thr Thr  
 115 120 125  
 Cys Leu Lys Asn Tyr Arg Lys Thr Leu Ile His Cys Tyr Gly Gly Leu  
 130 135 140  
 Gly Arg Ser Cys Leu Val Ala Ala Cys Leu Leu Leu Tyr Leu Ser Asp  
 145 150 155 160  
 Thr Ile Ser Pro Glu Gln Ala Ile Asp Ser Leu Arg Asp Leu Arg Gly

	165		170		175
Ser Gly Ala	Ile Gln Thr Ile Lys Gln Tyr Asn Tyr Leu His Glu Phe				
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Arg Asp Lys Leu Ala Ala His Leu Ser Ser Arg Asp Ser Gln Ser Arg					
	195		200		205
Ser Val Ser Arg					
	210				

<210> 372  
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 <212> DNA  
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<210> 373  
 <211> 1085  
 <212> PRT  
 <213> Homo sapiens

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 Leu Glu His Leu Met Lys Glu Phe Leu Asp Lys Lys Lys Tyr His Asn  
 50 55 60  
 Asp Pro Arg Phe Ile Ser Tyr Cys Leu Lys Phe Ala Glu Tyr Asn Ser  
 65 70 75 80  
 Asp Leu His Gln Phe Phe Glu Phe Leu Tyr Asn His Gly Ile Gly Thr  
 85 90 95  
 Leu Ser Ser Pro Leu Tyr Ile Ala Trp Ala Gly His Leu Glu Ala Gln  
 100 105 110  
 Gly Glu Leu Gln His Ala Ser Ala Val Leu Gln Arg Gly Ile Gln Asn  
 115 120 125  
 Gln Ala Glu Pro Arg Glu Phe Leu Gln Gln Gln Tyr Arg Leu Phe Gln  
 130 135 140  
 Thr Arg Leu Thr Glu Thr His Leu Pro Ala Gln Ala Arg Thr Ser Glu  
 145 150 155 160  
 Pro Leu His Asn Val Gln Val Leu Asn Gln Met Ile Thr Ser Lys Ser





Lys Glu Asn Val Val Ala Lys Gln Cys Thr Gln Ala Thr Leu Asp Ser  
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 Cys Glu Glu Asn Met Val Val Pro Ser Arg Asp Gly Lys Phe Ser Pro  
 645 650 655  
 Ile Gln Glu Lys Ser Pro Lys Gln Ala Leu Ser Ser His Met Tyr Ser  
 660 665 670  
 Ala Ser Leu Leu Arg Leu Ser Gln Pro Ala Ala Gly Gly Val Leu Thr  
 675 680 685  
 Cys Glu Ala Glu Leu Gly Val Glu Ala Cys Arg Leu Thr Asp Thr Asp  
 690 695 700  
 Ala Ala Ile Ala Glu Asp Pro Pro Asp Ala Ile Ala Gly Leu Gln Ala  
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 Glu Trp Met Gln Met Ser Ser Leu Gly Thr Val Asp Ala Pro Asn Phe  
 725 730 735  
 Ile Val Gly Asn Pro Trp Asp Asp Lys Leu Ile Phe Lys Leu Leu Ser  
 740 745 750  
 Gly Leu Ser Lys Pro Val Ser Ser Tyr Pro Asn Thr Phe Glu Trp Gln  
 755 760 765  
 Cys Lys Leu Pro Ala Ile Lys Pro Lys Thr Glu Phe Gln Leu Gly Ser  
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 Lys Leu Val Tyr Val His His Leu Leu Gly Glu Gly Ala Phe Ala Gln  
 785 790 795 800  
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 Ile Gly Thr Gln Leu Met Glu Arg Leu Lys Pro Ser Met Gln His Met  
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 Phe Met Lys Phe Tyr Ser Ala His Leu Phe Gln Asn Gly Ser Val Leu  
 850 855 860  
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<210> 374  
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<400> 374

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gattgagcaa  gtgcatgact  gtgaaatcat  tcatggagac  attaaaccag  acaatttcat  2820
acttggaac  ggatttttgg  aacaggatga  tgaagatgat  ttatctgctg  gcttggcact  2880

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gattgacctg ggtcagagta tagatatgaa actttttcca aaaggaacta tattcacagc 2940
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ccagatcgat tactttgggg ttgctgcaac agtatattgc atgctctttg gcacttacat 3060
gaaagtgaaa aatgaaggag gagagtgtaa gcctgaaggt ctttttagaa ggcttcctca 3120
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caagattagg gccctacgta ataggcta atgtactgctc ttagaatgta agcggtcacg 3300
aaaataaaat ttgatattg acagtcctta aaaatcacac tgtaaataatg aatctgctca 3360
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atggaatatt tccatgtaaa aaaaaa 3446

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<210> 375
<211> 724
<212> PRT
<213> Homo sapiens

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<400> 375
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Cys Ala Pro Ser Pro Gly Ala Tyr Asp Val Lys Thr Leu Glu Val Leu
20 25 30
Lys Gly Pro Val Ser Phe Gln Lys Ser Gln Arg Phe Lys Gln Gln Lys
35 40 45
Glu Ser Lys Gln Asn Leu Asn Val Asp Lys Asp Thr Thr Leu Pro Ala
50 55 60
Ser Ala Arg Lys Val Lys Ser Ser Glu Ser Lys Glu Ser Gln Lys Asn
65 70 75 80
Asp Lys Asp Leu Lys Ile Leu Glu Lys Glu Ile Arg Val Leu Leu Gln
85 90 95
Glu Arg Gly Ala Gln Asp Ser Arg Ile Gln Asp Leu Glu Thr Glu Leu
100 105 110
Glu Lys Met Glu Ala Arg Leu Asn Ala Ala Leu Arg Glu Lys Thr Ser
115 120 125
Leu Ser Ala Asn Asn Ala Thr Leu Glu Lys Gln Leu Ile Glu Leu Thr
130 135 140
Arg Thr Asn Glu Leu Leu Lys Ser Lys Phe Ser Glu Asn Gly Asn Gln
145 150 155 160
Lys Asn Leu Arg Ile Leu Ser Leu Glu Leu Met Lys Leu Arg Asn Lys
165 170 175
Arg Glu Thr Lys Met Arg Gly Met Met Ala Lys Gln Glu Gly Met Glu
180 185 190
Met Lys Leu Gln Val Thr Gln Arg Ser Leu Glu Glu Ser Gln Gly Lys
195 200 205
Ile Ala Gln Leu Glu Gly Lys Leu Val Ser Ile Glu Lys Glu Lys Ile
210 215 220
Asp Glu Lys Ser Glu Thr Glu Lys Leu Leu Glu Tyr Ile Glu Glu Ile
225 230 235 240
Ser Cys Ala Ser Asp Gln Val Glu Lys Tyr Lys Leu Asp Ile Ala Gln
245 250 255
Leu Glu Glu Asn Leu Lys Glu Lys Asn Asp Glu Ile Leu Ser Leu Lys
260 265 270
Gln Ser Leu Glu Glu Asn Ile Val Ile Leu Ser Lys Gln Val Glu Asp
275 280 285
Leu Asn Val Lys Cys Gln Leu Leu Glu Lys Glu Lys Glu Asp His Val
290 295 300
Asn Arg Asn Arg Glu His Asn Glu Asn Leu Asn Ala Glu Met Gln Asn
305 310 315 320

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Leu Lys Gln Lys Phe Ile Leu Glu Gln Gln Glu Arg Glu Lys Leu Gln  
 325 330 335  
 Gln Lys Glu Leu Gln Ile Asp Ser Leu Leu Gln Gln Glu Lys Glu Leu  
 340 345 350  
 Ser Ser Ser Leu His Gln Lys Leu Cys Ser Phe Gln Glu Glu Met Val  
 355 360 365  
 Lys Glu Lys Asn Leu Phe Glu Glu Glu Leu Lys Gln Thr Leu Asp Glu  
 370 375 380  
 Leu Asp Lys Leu Gln Gln Lys Glu Glu Gln Ala Glu Arg Leu Val Lys  
 385 390 395 400  
 Gln Leu Glu Glu Glu Ala Lys Ser Arg Ala Glu Glu Leu Lys Leu Leu  
 405 410 415  
 Glu Glu Lys Leu Lys Gly Lys Glu Ala Glu Leu Glu Lys Ser Ser Ala  
 420 425 430  
 Ala His Thr Gln Ala Thr Leu Leu Leu Gln Glu Lys Tyr Asp Ser Met  
 435 440 445  
 Val Gln Ser Leu Glu Asp Val Thr Ala Gln Phe Glu Ser Tyr Lys Ala  
 450 455 460  
 Leu Thr Ala Ser Glu Ile Glu Asp Leu Lys Leu Glu Asn Ser Ser Leu  
 465 470 475 480  
 Gln Glu Lys Ala Ala Lys Ala Gly Lys Asn Ala Glu Asp Val Gln His  
 485 490 495  
 Gln Ile Leu Ala Thr Glu Ser Ser Asn Gln Glu Tyr Val Arg Met Leu  
 500 505 510  
 Leu Asp Leu Gln Thr Lys Ser Ala Leu Lys Glu Thr Glu Ile Lys Glu  
 515 520 525  
 Ile Thr Val Ser Phe Leu Gln Lys Ile Thr Asp Leu Gln Asn Gln Leu  
 530 535 540  
 Lys Gln Gln Glu Glu Asp Phe Arg Lys Gln Leu Glu Asp Glu Glu Gly  
 545 550 555 560  
 Arg Lys Ala Glu Lys Glu Asn Thr Thr Ala Glu Leu Thr Glu Glu Ile  
 565 570 575  
 Asn Lys Trp Arg Leu Leu Tyr Glu Glu Leu Tyr Asn Lys Thr Lys Pro  
 580 585 590  
 Phe Gln Leu Gln Leu Asp Ala Phe Glu Val Glu Lys Gln Ala Leu Leu  
 595 600 605  
 Asn Glu His Gly Ala Ala Gln Glu Gln Leu Asn Lys Ile Arg Asp Ser  
 610 615 620  
 Tyr Ala Lys Leu Leu Gly His Gln Asn Leu Lys Gln Lys Ile Lys His  
 625 630 635 640  
 Val Val Lys Leu Lys Asp Glu Asn Ser Gln Leu Lys Ser Glu Val Ser  
 645 650 655  
 Lys Leu Arg Cys Gln Leu Ala Lys Lys Lys Gln Ser Glu Thr Lys Leu  
 660 665 670  
 Gln Glu Glu Leu Asn Lys Val Leu Gly Ile Lys His Phe Asp Pro Ser  
 675 680 685  
 Lys Ala Phe His His Glu Ser Lys Glu Asn Phe Ala Leu Lys Thr Pro  
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 Glu Ser Trp Lys

<210> 376  
 <211> 3002  
 <212> DNA

<213> Homo sapiens

<400> 376

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ttagaagtat tgaaaggacc agtatccttt cagaaatcac aaagatttaa acaacaaaaa 180
gaatctaaac aaaatcttaa tgttgacaaa gatactacct tgctgtcttc agctagaaaa 240
gttaagtctt cggaatcaaa ggaatctcaa aagaatgata aagatttgaa gatattagag 300
aaagagattc gtgttcttct acaggaacgt ggtgcccagg acagccggat ccaggatctg 360
gaaactgagt tggaaaagat ggaagcaagg ctaaatgctg cactaaggga aaaaacatct 420
ctctctgcaa ataatgctac actggaaaaa caacttattg aattgaccag gactaatgaa 480
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gagttgatga aacttagaaa caaaagagaa acaaagatga ggggtatgat ggctaagcaa 600
gaaggcatgg agatgaagct gcaggtcacc caaaggagtc tccaagagtc tcaagggaaa 660
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ttaagcctta agcagtctct tgaggagaat attgttata tctctaaaca agtagaagat 900
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caacaggaac gtgaaaagct tcaacaaaaa gaattacaaa ttgattcact tctgcaacaa 1080
gagaaagaat tatcttcgag tcttcacag aagctctggt cttttcaaga ggaaatgggt 1140
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cagcaaaagg aggaacaagc tgaaaggctg gtcaagcaat tggagagga agcaaaatct 1260
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gagatagaag atcttaagct ggagaactca tcattacagg aaaaagcggc caaggctggg 1500
aaaaatgcag aggatgttca gcatacagatt ttggcaactg agagctcaaa tcaagaatat 1560
gtaaggatgc ttctagatct gcagaccaag tcagcactaa aggaaacaga aattaaagaa 1620
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gaagacttta gaaaacagct ggaagatgaa gaaggaagaa aagctgaaaa agaaaatata 1740
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aatgaacatg gtgcagctca ggaacagcta aataaaataa gagattcata tgctaaatta 1920
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aa 3002
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<210> 377

<211> 246

<212> PRT  
 <213> Homo sapiens

<400> 377  
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 Gly Ser Ile Asp Gly Thr Asp Glu Asp Pro His Asp Arg Ala Val Trp  
 20 25 30  
 Arg Ala Met Leu Ala Arg Tyr Val Pro Asn Lys Gly Val Ile Gly Asp  
 35 40 45  
 Pro Leu Leu Thr Leu Phe Val Ala Arg Leu Asn Leu Gln Thr Lys Glu  
 50 55 60  
 Asp Lys Leu Lys Glu Val Phe Ser Arg Tyr Gly Asp Ile Arg Arg Leu  
 65 70 75 80  
 Arg Leu Val Arg Asp Leu Val Thr Gly Phe Ser Lys Gly Tyr Ala Phe  
 85 90 95  
 Ile Glu Tyr Lys Glu Glu Arg Ala Val Ile Lys Ala Tyr Arg Asp Ala  
 100 105 110  
 Asp Gly Leu Val Ile Asp Gln His Glu Ile Phe Val Asp Tyr Glu Leu  
 115 120 125  
 Glu Arg Thr Leu Lys Gly Trp Ile Pro Arg Arg Leu Gly Gly Gly Leu  
 130 135 140  
 Gly Gly Lys Lys Glu Ser Gly Gln Leu Arg Phe Gly Gly Arg Asp Arg  
 145 150 155 160  
 Pro Phe Arg Lys Pro Ile Asn Leu Pro Val Val Lys Asn Asp Leu Tyr  
 165 170 175  
 Arg Glu Gly Lys Arg Glu Arg Arg Glu Arg Ser Arg Ser Arg Glu Arg  
 180 185 190  
 His Trp Asp Ser Arg Thr Arg Asp Arg Asp His Asp Arg Gly Arg Glu  
 195 200 205  
 Lys Arg Trp Gln Glu Arg Glu Pro Thr Arg Val Trp Pro Asp Asn Asp  
 210 215 220  
 Trp Glu Arg Glu Arg Asp Phe Arg Asp Asp Arg Ile Lys Gly Arg Glu  
 225 230 235 240  
 Lys Lys Glu Arg Gly Lys  
 245

<210> 378  
 <211> 1509  
 <212> DNA  
 <213> Homo sapiens

<400> 378  
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 gagtcgccc ggctggagag cgggtggcgcg atctcggtc actgcagcgt cgacatttcg 180  
 ggtcaagcga tcctccagcc tcggcctctc aaagtgtgtg tattacaggc gtgagccagc 240  
 gcgtgcctgg ccaaaaattt tctaaatttg tataataatt tataattgta atgcattttt 300  
 atagacacca tatgatctaa tcttcacaaa aacctagtga agtgacattt agctacattt 360  
 cacaataaga atcctgaagc tcaaaattta ctgacctcaa ataatcccag cactttggga 420  
 ggctgaggca ggcgggtcat ctgacatcag gagtttgaga ccagcttggc caacatgggtg 480  
 aaatcctgtc tgtactaaaa atgcaaaaat tagctgggcg tgggtgggtgtg tgtctgtaat 540  
 cccagctact cggcctccca aagtgtctggg attacaggcg tgagccaccg cgtctggcct 600  
 cagccaaggt ttttaagtaa catatttcag cattggctct acagcgttgc agaacatgaa 660  
 cgattggatg cttctcgcca aggagtatga tccactcaaa gcgggcagca ttgatggcac 720  
 cgatgaagac ccacacgacc gcgcgggtctg gagggcaatg ctggcacgat atgtccccaa 780

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caaaggtgtc ataggagatc ccctcctcac cctgtttgtg gccagactaa acttgcagac 840
caaggaggac aaattaaagg aagtcttttc ccgctatggg gacatccggc ggcttcggct 900
ggtcagggac ttggtcacag gtttttcaaa gggctacgcc ttcacgaat acaaggagga 960
gcgtgccgtg atcaaaagctt accgagatgc tgatggcctg gttattgacc agcatgagat 1020
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cggctctggg ggaaaaaagg agtctgggca actgagattt gggggacggg accggccttt 1140
tcgaaaacct attaaacttg cagttgttaa aaacgacctc tatagagagg gaaaacggga 1200
aaggcgggag cgatctcgat cccgagaaaag aacttgggac tcgaggacaa gggatcgaga 1260
ccatgacagg ggccgggaga agagatggca agaaagagag ccgaccaggg tgtggccccga 1320
caatgactgg gagagagaga gggacttcag agatgacagg atcaagggga gggagaagaa 1380
ggaaaagagg aagtagaggc ccaacagcag aaccccaaag tgaagttaca gtggaaatga 1440
gtggaggggg attgtctttc aacgcagcgt gagtctaatt gttgaataaa acttactgat 1500
gatcaaaaaa                                     1509

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<210> 379

<211> 246

<212> PRT

<213> Homo sapiens

<400> 379

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Met Asn Asp Trp Met Pro Ile Ala Lys Glu Tyr Asp Pro Leu Lys Ala
 1           5           10           15
Gly Ser Ile Asp Gly Thr Asp Glu Asp Pro His Asp Arg Ala Val Trp
          20           25           30
Arg Ala Met Leu Ala Arg Tyr Val Pro Asn Lys Gly Val Ile Gly Asp
          35           40           45
Pro Leu Leu Thr Leu Phe Val Ala Arg Leu Asn Leu Gln Thr Lys Glu
          50           55           60
Asp Lys Leu Lys Glu Val Phe Ser Arg Tyr Gly Asp Ile Arg Arg Leu
65           70           75           80
Arg Leu Val Arg Asp Leu Val Thr Gly Phe Ser Lys Gly Tyr Ala Phe
          85           90           95
Ile Glu Tyr Lys Glu Glu Arg Ala Val Ile Lys Ala Tyr Arg Asp Ala
          100          105          110
Asp Gly Leu Val Ile Asp Gln His Glu Ile Phe Val Asp Tyr Glu Leu
          115          120          125
Glu Arg Thr Leu Lys Gly Trp Ile Pro Arg Arg Leu Gly Gly Gly Leu
          130          135          140
Gly Gly Lys Lys Glu Ser Gly Gln Leu Arg Phe Gly Gly Arg Asp Arg
145          150          155          160
Pro Phe Arg Lys Pro Ile Asn Leu Pro Val Val Lys Asn Asp Leu Tyr
          165          170          175
Arg Glu Gly Lys Arg Glu Arg Arg Glu Arg Ser Arg Ser Arg Glu Arg
          180          185          190
His Trp Asp Ser Arg Thr Arg Asp Arg Asp His Asp Arg Gly Arg Glu
          195          200          205
Lys Arg Trp Gln Glu Arg Glu Pro Thr Arg Val Trp Pro Asp Asn Asp
          210          215          220
Trp Glu Arg Glu Arg Asp Phe Arg Asp Asp Arg Ile Lys Gly Arg Glu
225          230          235          240
Lys Lys Glu Arg Gly Lys
          245

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<210> 380

<211> 967

<212> DNA



<213> Homo sapiens

<400> 380

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acgattggat gcccatcgcc aaggagtatg atccactcaa agcgggcagc attgatggca 180
ccgatgaaga cccacacgac cgcgcggtct ggagggcaat gctggcacga tatgtcccca 240
acaaagggtgt cataggagat cccctcctca cctgtttgt ggccagacta aacttgcaga 300
ccaaggagga caaattaaag gaagtctttt cccgctatgg tgacatccgg cggcttcggc 360
tggtcagggg cttggtcaca ggtttttcaa agggctacgc cttcatcgaa tacaaggagg 420
agcgtgccgt gatcaaagct taccgagatg ctgatggcct ggttattgac cagcatgaga 480
tatttgtgga ctacgagctg gaaaggactc tcaaaggggtg gatecctcgg cgacttggag 540
gcggtcttgg gggaaaaaag gagtctgggc aactgagatt tgggggacgg gaccggcctt 600
ttcgaaaacc tattaacttg ccagttgtta aaaacgacct ctatagagag ggaaaacggg 660
aaaggcgagg gcgatctcga tcccgagaaa gacactggga ctcgaggaca agggatcgag 720
accatgacag gggccggggg aagagatggc aagaaagaga gccgaccagg gtgtggcccc 780
acaatgactg ggagagagag agggacttca gagatgacag gatcaagggg agggagaaga 840
aggaaagagg caagtagagg cccaacagca gaaccccaaa gtgaagttac agtggaaatg 900
agtggagggg gattgtcttt caacgcagcg tgagtctaag ggttgaataa aacttactga 960
tgatcaa
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967

<210> 381

<211> 226

<212> PRT

<213> Homo sapiens

<400> 381

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Met Ser Glu Thr Ala Pro Ala Glu Thr Ala Thr Pro Ala Pro Val Glu
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Lys Ser Pro Ala Lys Lys Lys Ala Thr Lys Lys Ala Ala Gly Ala Gly
 20          25          30
Ala Ala Lys Arg Lys Ala Thr Gly Pro Pro Val Ser Glu Leu Ile Thr
 35          40          45
Lys Ala Val Ala Ala Ser Lys Glu Arg Asn Gly Leu Ser Leu Ala Ala
 50          55          60
Leu Lys Lys Ala Leu Ala Gly Gly Tyr Asp Val Glu Lys Asn Asn
 65          70          75          80
Ser Arg Ile Lys Leu Gly Leu Lys Ser Leu Val Ser Lys Gly Thr Leu
 85          90          95
Val Gln Thr Lys Gly Thr Gly Ala Ser Gly Ser Phe Lys Leu Asn Lys
100          105          110
Lys Ala Ala Ser Gly Glu Ala Lys Pro Lys Ala Lys Lys Ala Gly Ala
115          120          125
Ala Lys Ala Lys Lys Pro Ala Gly Ala Thr Pro Lys Lys Ala Lys Lys
130          135          140
Ala Ala Gly Ala Lys Lys Ala Val Lys Lys Thr Pro Lys Lys Ala Lys
145          150          155          160
Lys Pro Ala Ala Ala Gly Val Lys Lys Val Ala Lys Ser Pro Lys Lys
165          170          175
Ala Lys Ala Ala Ala Lys Pro Lys Lys Ala Thr Lys Ser Pro Ala Lys
180          185          190
Pro Lys Ala Val Lys Pro Lys Ala Ala Lys Pro Lys Ala Ala Lys Pro
195          200          205
Lys Ala Ala Lys Pro Lys Ala Ala Lys Ala Lys Lys Ala Ala Ala Lys
210          215          220
Lys Lys
225
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<210> 382  
 <211> 790  
 <212> DNA  
 <213> Homo sapiens

<400> 382  
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 ggcaactaag aaggctgccg gcgccggcgc tgctaagcgc aaagcgacgg ggcccccagt 180  
 ctcagagctg atcaccaagg ctgtggctgc ttctaaggag cgcaatggcc tttctttggc 240  
 agcccttaag aaggccttag cggccggtgg ctacgacgtg gagaagaata acagccgcat 300  
 taagctgggc ctcaagagct tggtagcaa gggcaccctg gtgcagacca agggcactgg 360  
 tgcttctggc tcctttaaac tcaacaagaa ggcggcctcc ggggaagcca agcccaaagc 420  
 caagaaggca ggcgcgcgta aagctaagaa gccgcggggg gccacgccta agaaggccaa 480  
 gaaggctgca ggggcgaaaa aggcagtga gaagactccg aagaaggcga agaagcccg 540  
 ggcggctggc gtcaaaaagg tggcgaagag ccctaagaag gccaaaggcc ctgccaaacc 600  
 gaaaaaggca accaagagtc ctgccaaagg caaggcagtt aagccgaagg cggcaaagcc 660  
 caaagccgct aagcccaaag cagcaaaacc taaagctgca aaggccaaga aggcggctgc 720  
 caaaaagaag taggaagctg gcgtgtgaaa accgcaacaa agccccaaag gctcttttca 780  
 gagccacca 790

<210> 383  
 <211> 202  
 <212> PRT  
 <213> Homo sapiens

<400> 383  
 Met Ala Thr Leu Ile Tyr Val Asp Lys Glu Asn Glu Glu Pro Gly Ile  
 1 5 10 15  
 Leu Val Ala Thr Lys Asp Gly Leu Lys Leu Gly Ser Gly Pro Ser Ile  
 20 25 30  
 Lys Ala Leu Asp Gly Arg Ser Gln Val Ser Ile Ser Cys Phe Gly Lys  
 35 40 45  
 Thr Phe Asp Ala Pro Thr Ser Leu Pro Lys Ala Thr Arg Lys Ala Leu  
 50 55 60  
 Gly Thr Val Asn Arg Ala Thr Glu Lys Ser Val Lys Thr Asn Gly Pro  
 65 70 75 80  
 Leu Lys Gln Lys Gln Pro Ser Phe Ser Ala Lys Lys Met Thr Glu Lys  
 85 90 95  
 Thr Val Lys Ala Lys Asn Ser Val Pro Ala Ser Asp Asp Gly Tyr Pro  
 100 105 110  
 Glu Ile Glu Lys Leu Phe Pro Phe Asn Pro Leu Gly Phe Glu Ser Phe  
 115 120 125  
 Asp Leu Pro Glu Glu His Gln Ile Ala His Leu Pro Leu Ser Glu Val  
 130 135 140  
 Pro Leu Met Ile Leu Asp Glu Glu Arg Glu Leu Glu Lys Leu Phe Gln  
 145 150 155 160  
 Leu Gly Pro Pro Ser Pro Leu Lys Met Pro Ser Pro Pro Trp Lys Ser  
 165 170 175  
 Asn Leu Leu Gln Ser Pro Leu Ser Ile Leu Leu Thr Leu Asp Val Glu  
 180 185 190  
 Leu Pro Pro Val Cys Cys Asp Ile Asp Ile  
 195 200

<210> 384  
 <211> 609  
 <212> DNA  
 <213> Homo sapiens

<400> 384  
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 aaggatgggc tgaagctggg gtctggacct tcaatcaaag ccttagatgg gagatctcaa 120  
 gtttcaatat catgttttgg caaaacattc gatgtcctca catccttacc taaagctacc 180  
 agaaaggctt tgggaactgt caacagagct acagaaaagt cagtaaagac caatggaccc 240  
 ctcaaacaaa aacagccaag cttttctgcc aaaaagatga ctgagaagac tgttaaagca 300  
 aaaaactctg ttcttgcttc agatgatggc tatccagaaa tagaaaaatt atttcccttc 360  
 aatcctctag gcttcgagag ttttgacctg cctgaagagc accagattgc acatctcccc 420  
 ttgagtgaag tgcctctcat gatacttgat gaggagagag agcttgaaaa gctgtttcag 480  
 ctgggcccccc cttcaccttt gaagatgcc cctccaccat ggaaatccaa tctgttgcag 540  
 tctcctttaa gcattctgtt gaccctggat gttgaattgc cacctgtttg ctgtgacata 600  
 gatatttaa 609

<210> 385  
 <211> 322  
 <212> PRT  
 <213> Homo sapiens

<400> 385  
 Met Glu Gly Ile Ser Asn Phe Lys Thr Pro Ser Lys Leu Ser Glu Lys  
 1 5 10 15  
 Lys Lys Ser Val Leu Cys Ser Thr Pro Thr Ile Asn Ile Pro Ala Ser  
 20 25 30  
 Pro Phe Met Gln Lys Leu Gly Phe Gly Thr Gly Val Asn Val Tyr Leu  
 35 40 45  
 Met Lys Arg Ser Pro Arg Gly Leu Ser His Ser Pro Trp Ala Val Lys  
 50 55 60  
 Lys Ile Asn Pro Ile Cys Asn Asp His Tyr Arg Ser Val Tyr Gln Lys  
 65 70 75 80  
 Arg Leu Met Asp Glu Ala Lys Ile Leu Lys Ser Leu His His Pro Asn  
 85 90 95  
 Ile Val Gly Tyr Arg Ala Phe Thr Glu Ala Asn Asp Gly Ser Leu Cys  
 100 105 110  
 Leu Ala Met Glu Tyr Gly Gly Glu Lys Ser Leu Asn Asp Leu Ile Glu  
 115 120 125  
 Glu Arg Tyr Lys Ala Ser Gln Asp Pro Phe Pro Ala Ala Ile Ile Leu  
 130 135 140  
 Lys Val Ala Leu Asn Met Ala Arg Gly Leu Lys Tyr Leu His Gln Glu  
 145 150 155 160  
 Lys Lys Leu Leu His Gly Asp Ile Lys Ser Ser Asn Val Val Ile Lys  
 165 170 175  
 Gly Asp Phe Glu Thr Ile Lys Ile Cys Asp Val Gly Val Ser Leu Pro  
 180 185 190  
 Leu Asp Glu Asn Met Thr Val Thr Asp Pro Glu Ala Cys Tyr Ile Gly  
 195 200 205  
 Thr Glu Pro Trp Lys Pro Lys Glu Ala Val Glu Glu Asn Gly Val Ile  
 210 215 220  
 Thr Asp Lys Ala Asp Ile Phe Ala Phe Gly Leu Thr Leu Trp Glu Met  
 225 230 235 240  
 Met Thr Leu Ser Ile Pro His Ile Asn Leu Ser Asn Asp Asp Asp Asp  
 245 250 255  
 Glu Asp Lys Thr Phe Asp Glu Ser Asp Phe Asp Asp Glu Ala Tyr Tyr

	260		265		270										
Ala	Ala	Leu	Gly	Thr	Arg	Pro	Pro	Ile	Asn	Met	Glu	Glu	Leu	Asp	Glu
	275						280					285			
Ser	Tyr	Gln	Lys	Val	Ile	Glu	Leu	Phe	Ser	Val	Cys	Thr	Asn	Glu	Asp
	290					295					300				
Pro	Lys	Asp	Arg	Pro	Ser	Ala	Ala	His	Ile	Val	Glu	Ala	Leu	Glu	Thr
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Asp	Val														

<210> 386  
 <211> 1899  
 <212> DNA  
 <213> Homo sapiens

<400> 386  
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 gaggtacttg gccacgactt attttcacct ccgacctttc cttccaggcg gtgagactct 180  
 ggactgagag tggctttcac aatggaaggg atcagtaatt tcaagacacc aagcaaatta 240  
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 tttatgcaga agcttggcct tgggtactggg gtaaatgtgt acctaatgaa aagatctcca 360  
 agagggtttgt ctcatctctc ttgggctgta aaaaagatta atcctatatg taatgatcat 420  
 tatcgaagtg tgtatcaaaa gagactaatg gatgaagcta agattttgaa aagccttcat 480  
 catccaaaca ttgttggtta tcgtgctttt actgaagcca atgatggcag tctgtgtctt 540  
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 agccaagatc cttttccagc agccataatt ttaaaagttg ctttgaatat ggcaagaggg 660  
 ttaaagtatc tgcaccaaga aaagaaactg cttcatggag acataaagtc ttcaaagtgt 720  
 gtaattaaag gcgattttga aacaattaaa atctgtgatg taggagtctc tctaccactg 780  
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 ggccttactt tgtgggaaat gatgaactta tcgattccac acattaatct ttcaaagtat 960  
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 attgttgaag ctctggaaac agatgtctag tgatcatctc agctgaagtg tggcttgcgt 1200  
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 aatatgctta tattggctat aagcacttgg aattgtactg ggttttctgt aaagttttag 1380  
 aaactagcta cataagtact ttgatactgc tcatgctgac ttaaaacact agcagtaaaa 1440  
 cgctgtaaac tgtaacatta aattgaatga ccattacttt tattaatgat ctttcttaaa 1500  
 tattctatat ttaaatggat ctactgacat tagcactttg tacagtacaa aataaagtct 1560  
 acatttgttt aaaacactga accttttgct gatgtgttta tcaaatagata actggaagct 1620  
 gaggagaata tgcctcaaaa agagtagctc cttggatact tcagactctg gttacagatt 1680  
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 ttccatactg agtttaaaat ttattaattt gtaccttaag catttcccag ctgtgtaaaa 1800  
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 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1899

<210> 387  
 <211> 202  
 <212> PRT  
 <213> Homo sapiens

<400> 387  
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			20					25					30				
Lys	Ala	Leu	Asp	Gly	Arg	Ser	Gln	Val	Ser	Thr	Pro	Arg	Phe	Gly	Lys		
		35					40					45					
Thr	Phe	Asp	Ala	Pro	Pro	Ala	Leu	Pro	Lys	Ala	Thr	Arg	Lys	Ala	Leu		
	50					55					60						
Gly	Thr	Val	Asn	Arg	Ala	Thr	Glu	Lys	Ser	Val	Lys	Thr	Lys	Gly	Pro		
65					70					75					80		
Leu	Lys	Gln	Lys	Gln	Pro	Ser	Phe	Ser	Ala	Lys	Lys	Met	Thr	Glu	Lys		
				85				90					95				
Thr	Val	Lys	Ala	Lys	Ser	Ser	Val	Pro	Ala	Ser	Asp	Asp	Ala	Tyr	Pro		
			100					105					110				
Glu	Ile	Glu	Lys	Phe	Phe	Pro	Phe	Asn	Pro	Leu	Asp	Phe	Glu	Ser	Phe		
	115						120					125					
Asp	Leu	Pro	Glu	Glu	His	Gln	Ile	Ala	His	Leu	Pro	Leu	Ser	Gly	Val		
	130					135					140						
Pro	Leu	Met	Ile	Leu	Asp	Glu	Glu	Arg	Glu	Leu	Glu	Lys	Leu	Phe	Gln		
145					150					155					160		
Leu	Gly	Pro	Pro	Ser	Pro	Val	Lys	Met	Pro	Ser	Pro	Pro	Trp	Glu	Ser		
				165					170					175			
Asn	Leu	Leu	Gln	Ser	Pro	Ser	Ser	Ile	Leu	Ser	Thr	Leu	Asp	Val	Glu		
			180					185					190				
Leu	Pro	Pro	Val	Cys	Cys	Asp	Ile	Asp	Ile								
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<210> 388  
 <211> 728  
 <212> DNA  
 <213> Homo sapiens

<400> 388  
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 ctggggctctg gaccttcaat caaagcetta gatgggagat ctcaagtttc aacaccacgt 180  
 ttggcaaaaa cgttcgatgc cccaccagcc ttacctaaag ctactagaaa ggctttggga 240  
 actgtcaaca gagctacaga aaagtctgta aagaccaagg gacctctcaa acaaaaacag 300  
 ccaagctttt ctgccaaaaa gatgactgag aagactgtta aagcaaaaag ctctgttctt 360  
 gctcagatg atgcctatcc agaaatagaa aaattctttc ccttcaatcc tctagacttt 420  
 gagagttttg acctgcctga agagcaccag attgcgcacc tccccttgag tggagtgcct 480  
 ctcatgatcc ttgacgagga gagagagctt gaaaagctgt ttcagctggg ccccccttca 540  
 cctgtgaaga tgccctctcc accatgggaa tccaatctgt tgcagtctcc ttcaagcatt 600  
 ctgtcgaccc tggatgttga attgccacct gtttgcgtgtg acatagatat ttaaattttt 660  
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 aaaaaaaaaa 728

<210> 389  
 <211> 221  
 <212> PRT  
 <213> Homo sapiens

<400> 389  
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 Lys Thr Pro Val Lys Lys Lys Ala Lys Lys Ala Gly Ala Thr Ala Gly  
 20 25 30

Lys Arg Lys Ala Ser Gly Pro Pro Val Ser Glu Leu Ile Thr Lys Ala  
 35 40 45  
 Val Ala Ala Ser Lys Glu Arg Ser Gly Val Ser Leu Ala Ala Leu Lys  
 50 55 60  
 Lys Ala Leu Ala Ala Ala Gly Tyr Asp Val Glu Lys Asn Asn Ser Arg  
 65 70 75 80  
 Ile Lys Leu Gly Leu Lys Ser Leu Val Ser Lys Gly Thr Leu Val Gln  
 85 90 95  
 Thr Lys Gly Thr Gly Ala Ser Gly Ser Phe Lys Leu Asn Lys Lys Ala  
 100 105 110  
 Ala Ser Gly Glu Gly Lys Pro Lys Ala Lys Lys Ala Gly Ala Ala Lys  
 115 120 125  
 Pro Arg Lys Pro Ala Gly Ala Ala Lys Lys Pro Lys Lys Val Ala Gly  
 130 135 140  
 Ala Ala Thr Pro Lys Lys Ser Ile Lys Lys Thr Pro Lys Lys Val Lys  
 145 150 155 160  
 Lys Pro Ala Thr Ala Ala Gly Thr Lys Lys Val Ala Lys Ser Ala Lys  
 165 170 175  
 Lys Val Lys Thr Pro Gln Pro Lys Lys Ala Ala Lys Ser Pro Ala Lys  
 180 185 190  
 Ala Lys Ala Pro Lys Pro Lys Ala Ala Lys Pro Lys Ser Gly Lys Pro  
 195 200 205  
 Lys Val Thr Lys Ala Lys Lys Ala Ala Pro Lys Lys Lys  
 210 215 220

<210> 390  
 <211> 777  
 <212> DNA  
 <213> Homo sapiens

<400> 390  
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 aaaggcgaag aaggcaggcg caactgctgg gaaacgcaaa gcatccggac cccagttatc 180  
 tgagcttatc accaaggcag tggcagcttc taaggagcgc agcggcggtt ctctggccgc 240  
 gcttaagaaa gcgcttgccg ctgctggcta cgatgtagaa aaaaacaaca gccgtatcaa 300  
 gcttgccctc aagagcttgg tgagcaaagg tactctggtg cagaccaag gtaccgggtc 360  
 ttctggctcc ttcaaaactca acaagaaagc ggcttcggg gaaggcaaac ccaaggccaa 420  
 aaaggctggc gcagccaagc ctaggaagcc tgctggggca gccagaagc ccaagaaggt 480  
 ggctggcgcc gctaccccgga agaaaagcat caaaaagact cctaagaagg taaagaagcc 540  
 agcaaccgct gctgggacca agaaagtggc caagagtgcg aaaaagggtga aaacacctca 600  
 gccaaaaaaa gctgccaaga gtccagctaa ggccaaagcc cctaagccca aggcggccaa 660  
 gcctaagtcg gggaagccga aggttacaaa ggcaagaag gcagctccga agaaaaagtg 720  
 aaactggcgg gacgttcccc ttgaaaatt ttaaagggt cttttcagag ccacca 777

<210> 391  
 <211> 846  
 <212> PRT  
 <213> Homo sapiens

<400> 391  
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 Glu Met Ile Arg Thr Lys Ile Ala His Arg Lys Ser Leu Ser Gln Lys  
 20 25 30  
 Glu Asn Arg His Lys Glu Tyr Glu Arg Asn Arg His Phe Gly Leu Lys







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 agatgtaaac attccaacct tggaaggtag aattcttggt gaattagatg agacatctca 420  
 agagcttggt ccagaaaaga ccaatgttaa gccaggggca atgaaaacta ttctaggtga 480  
 tcaacgaaaa cagatgctcc aaaaatacaa agaagaaaag caacttcaaa aattgaaaga 540  
 gcagagagag aaagctaaac gaggaatatt taaagtgggt cgttatagac ctgatatgcc 600  
 ttgttttctt ttatcaaac agaatgctgt gaaagctgag ccaaaaaagg ctattccatc 660  
 ttctgtacgg attacaaggt caaaggccaa agaccaaag gagcagacta agattgataa 720  
 cgagagtgat gttcgagcaa tccgacctgg tccaagacaa acttctgaaa agaaagtgtc 780  
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 tgccaaaaat gtagaaacaa aacccgacaa ggggtatttct tgtaaagtgc atagtgaaga 1020  
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 agaattgca gcagaaatc gcttagctgc cataaaaaat gcaatgagag agagaattag 1980  
 gcaggaagaa tgtgctgaaa cagcagtttc tgtgatacca aaggaagttg ataaaatagt 2040  
 gtctgatgct ggatttttca gagttgaaag tctgtttaa ttattctcag gactttctgt 2100  
 ctcttctgaa ggcccttctc aaagacttgg aacacctaa tctgtcaaca aagctgtatc 2160  
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 tacattttca acacagaata aaaaatgtac tgtgccttg 2979

<210> 393  
 <211> 450  
 <212> PRT  
 <213> Homo sapiens

<400> 393  
 Met Asp Ala Arg Arg Val Pro Gln Lys Asp Leu Arg Val Lys Lys Asn  
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 20 25 30  
 Ser Ser Asp Asp Ser Cys Asp Ser Phe Ala Ser Asp Asn Phe Ala Asn

Thr	Lys	35	Pro	Lys	Phe	Arg	Ser	40	Asp	Ile	Ser	Glu	Glu	45	Leu	Ala	Ser	Val
50							55						60					
Phe	Tyr	Glu	Asp	Ser	Asp	Asn	Glu	Ser	Phe	Cys	Gly	Phe	Ser	Glu	Ser			
65					70					75					80			
Glu	Val	Gln	Asp	Val	Leu	Asp	His	Cys	Gly	Phe	Leu	Gln	Lys	Pro	Arg			
				85					90					95				
Pro	Asp	Val	Thr	Asn	Glu	Leu	Ala	Gly	Ile	Phe	His	Ala	Asp	Ser	Asp			
			100					105						110				
Asp	Glu	Ser	Phe	Cys	Gly	Phe	Ser	Glu	Ser	Glu	Ile	Gln	Asp	Gly	Met			
		115					120						125					
Arg	Leu	Gln	Ser	Val	Arg	Glu	Gly	Cys	Arg	Thr	Arg	Ser	Gln	Cys	Arg			
		130				135					140							
His	Ser	Gly	Pro	Leu	Arg	Val	Ala	Met	Lys	Phe	Pro	Ala	Arg	Ser	Thr			
145					150					155					160			
Arg	Gly	Ala	Thr	Asn	Lys	Lys	Ala	Glu	Ser	Arg	Gln	Pro	Ser	Glu	Asn			
				165					170					175				
Ser	Val	Thr	Asp	Ser	Asn	Ser	Asp	Ser	Glu	Asp	Glu	Ser	Gly	Met	Asn			
			180					185						190				
Phe	Leu	Glu	Lys	Arg	Ala	Leu	Asn	Ile	Lys	Gln	Asn	Lys	Ala	Met	Leu			
		195					200						205					
Ala	Lys	Leu	Met	Ser	Glu	Leu	Glu	Ser	Phe	Pro	Gly	Ser	Phe	Arg	Gly			
		210				215					220							
Arg	His	Pro	Leu	Pro	Gly	Ser	Asp	Ser	Gln	Ser	Arg	Arg	Pro	Arg	Arg			
225					230					235				240				
Arg	Thr	Phe	Pro	Gly	Val	Ala	Ser	Arg	Arg	Asn	Pro	Glu	Arg	Arg	Ala			
				245					250					255				
Arg	Pro	Leu	Thr	Arg	Ser	Arg	Ser	Arg	Ile	Leu	Gly	Ser	Leu	Asp	Ala			
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Leu	Pro	Met	Glu	Glu	Glu	Glu	Glu	Glu	Asp	Lys	Tyr	Met	Leu	Val	Arg			
		275					280						285					
Lys	Arg	Lys	Thr	Val	Asp	Gly	Tyr	Met	Asn	Glu	Asp	Asp	Leu	Pro	Arg			
		290				295					300							
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305					310					315				320				
Val	Glu	Glu	Ile	Thr	Glu	Glu	Glu	Leu	Glu	Asn	Val	Cys	Ser	Asn	Ser			
				325					330					335				
Arg	Glu	Lys	Ile	Tyr	Asn	Arg	Ser	Leu	Gly	Ser	Thr	Cys	His	Gln	Cys			
			340					345						350				
Arg	Gln	Lys	Thr	Ile	Asp	Thr	Lys	Thr	Asn	Cys	Arg	Asn	Pro	Asp	Cys			
			355				360						365					
Trp	Gly	Val	Arg	Gly	Gln	Phe	Cys	Gly	Pro	Cys	Leu	Arg	Asn	Arg	Tyr			
		370				375					380							
Gly	Glu	Glu	Val	Arg	Asp	Ala	Leu	Leu	Asp	Pro	Asn	Trp	His	Cys	Pro			
385					390					395				400				
Pro	Cys	Arg	Gly	Ile	Cys	Asn	Cys	Ser	Phe	Cys	Arg	Gln	Arg	Asp	Gly			
				405					410					415				
Arg	Cys	Ala	Thr	Gly	Val	Leu	Val	Tyr	Leu	Ala	Lys	Tyr	His	Gly	Phe			
			420					425					430					
Gly	Asn	Val	His	Ala	Tyr	Leu	Lys	Ser	Leu	Lys	Gln	Glu	Phe	Glu	Met			
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<210> 394

<211> 2824

<212> DNA

<213> Homo sapiens

<400> 394

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<211> 142

<212> PRT

<213> Homo sapiens

<400> 395

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			20					25					30		
Cys	Thr	Pro	Glu	Arg	Met	Ala	Glu	Ala	Gly	Phe	Ile	His	Cys	Pro	Thr
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Glu	Asn	Glu	Pro	Asp	Leu	Ala	Gln	Cys	Phe	Phe	Cys	Phe	Lys	Glu	Leu
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65					70					75					80
Ser	Ser	Gly	Cys	Ala	Phe	Leu	Ser	Val	Lys	Lys	Gln	Phe	Glu	Glu	Leu
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Thr	Leu	Gly	Glu	Phe	Leu	Lys	Leu	Asp	Arg	Glu	Arg	Ala	Lys	Asn	Lys
			100					105					110		
Ile	Ala	Lys	Glu	Thr	Asn	Asn	Lys	Lys	Lys	Glu	Phe	Glu	Glu	Thr	Ala
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<210> 397

<211> 1401  
 <212> PRT  
 <213> Homo sapiens

<400> 397

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Ser	Ile	Lys	His	Leu	Pro	Pro	Gln	Leu	Arg	Ala	Phe	Gln	Ala	Ala	Phe
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Arg	Ala	Gln	Gly	Pro	Leu	Ala	Met	Leu	Gln	His	Phe	Asp	Thr	Ile	Tyr
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Thr	Leu	Glu	Phe	Leu	Ile	Lys	Val	Val	Ser	Arg	His	Ser	Gln	Glu	Leu
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Pro	Ala	Ile	Leu	Asp	Asp	Thr	Thr	Leu	Ser	Gly	Ser	Asp	Arg	Asn	Ala
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His	Leu	Asn	Ala	Leu	Lys	Met	Asn	Cys	Tyr	Ala	Leu	Ile	Arg	Leu	Leu
		115					120					125			
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Leu	Gly	Gly	Lys	Gly	Lys	Lys	Ala	Arg	Thr	Lys	Ala	Ala	His	Gly	Phe
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Asp	Trp	Glu	Glu	Glu	Arg	Gln	Pro	Ile	Leu	Gln	Leu	Leu	Thr	Gln	Leu
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Glu	Phe	Val	Ser	Leu	Val	Thr	Gly	Cys	Cys	Tyr	Arg	Leu	Leu	Glu	Asn
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Pro	Thr	Ile	Asn	His	Gln	Lys	Asn	Arg	Pro	Thr	Arg	Glu	Ala	Ile	Thr
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Val	Leu	Ala	Ala	Met	Ala	Glu	Met	Val	Leu	Gln	Val	Leu	Ser	Gly	Asp
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<211> 5547

<212> DNA

<213> Homo sapiens

<400> 398

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<211> 213

<212> PRT  
 <213> Homo sapiens

<400> 399

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			20					25					30		
Cys	Lys	Glu	Trp	Glu	Ala	Ala	Val	Arg	Arg	Lys	Asn	Phe	Lys	Pro	Thr
		35					40					45			
Lys	Tyr	Ser	Ser	Ile	Cys	Ser	Glu	His	Phe	Thr	Pro	Asp	Cys	Phe	Lys
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Arg	Glu	Cys	Asn	Asn	Lys	Leu	Leu	Lys	Glu	Asn	Ala	Val	Pro	Thr	Ile
65				70					75					80	
Phe	Leu	Cys	Thr	Glu	Pro	His	Asp	Lys	Lys	Glu	Asp	Leu	Leu	Glu	Pro
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Gln	Glu	Gln	Leu	Pro	Pro	Pro	Pro	Leu	Pro	Pro	Pro	Val	Ser	Gln	Val
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Leu	Ser	Val	Phe	Cys	Asp	His	Asn	Tyr	Thr	Val	Glu	Asp	Thr	Met	His
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<210> 400  
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 <212> DNA  
 <213> Homo sapiens

<400> 400

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<210> 401  
 <211> 823  
 <212> PRT  
 <213> Homo sapiens

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<400> 401
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 20             25             30
Gln Gly Asn Leu Lys Lys Ala Leu Val Asn Val Glu Trp Asn Ile Cys
 35             40             45
Gln Asp Cys Lys Thr Asp Asn Lys Val Lys Asp Lys Ala Glu Glu Glu
 50             55             60
Thr Glu Glu Lys Pro Ser Val Trp Leu Cys Leu Lys Cys Gly His Gln
 65             70             75             80
Gly Cys Gly Arg Asn Ser Gln Glu Gln His Ala Leu Lys His Tyr Leu
 85             90             95
Thr Pro Arg Ser Glu Pro His Cys Leu Val Leu Ser Leu Asp Asn Trp
100            105            110
Ser Val Trp Cys Tyr Val Cys Asp Asn Glu Val Gln Tyr Cys Ser Ser
115            120            125
Asn Gln Leu Gly Gln Val Val Asp Tyr Val Arg Lys Gln Ala Ser Ile
130            135            140
Thr Thr Pro Lys Pro Ala Glu Lys Asp Asn Gly Asn Ile Glu Leu Glu
145            150            155            160
Asn Lys Lys Leu Glu Lys Glu Ser Lys Asn Glu Gln Glu Arg Glu Lys
165            170            175
Lys Glu Asn Met Ala Lys Glu Asn Pro Pro Met Asn Ser Pro Cys Gln
180            185            190
Ile Thr Val Lys Gly Leu Ser Asn Leu Gly Asn Thr Cys Phe Phe Asn
195            200            205
Ala Val Met Gln Asn Leu Ser Gln Thr Pro Val Leu Arg Glu Leu Leu
210            215            220
Lys Glu Val Lys Met Ser Gly Thr Ile Val Lys Ile Glu Pro Pro Asp
225            230            235            240

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 Ala Val Arg Phe Lys Gly Tyr Gln Gln Gln Asp Ser Gln Glu Leu Leu  
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 Arg Tyr Leu Leu Asp Gly Met Arg Ala Glu Glu His Gln Arg Val Ser  
 305 310 315 320  
 Lys Gly Ile Leu Lys Ala Phe Gly Asn Ser Thr Glu Lys Leu Asp Glu  
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 Tyr Glu Ala Glu Met Ser Leu Gln Gly Glu Val Asn Ile Lys Ser Asn  
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 His Ile Ser Gln Glu Gly Val Met His Lys Glu Tyr Cys Val Asn Gln  
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 Cys Thr Arg Arg Gln Cys Asn Gly Pro Lys Ala Asn Ile Lys Gly Glu  
 660 665 670  
 Arg Lys His Val Tyr Thr Asn Ala Lys Lys Gln Met Leu Ile Ser Leu  
 675 680 685  
 Ala Pro Pro Val Leu Thr Leu His Leu Lys Arg Phe Gln Gln Ala Gly

690		695		700
Phe Asn Leu Arg Lys Val Asn Lys His Ile Lys Phe Pro Glu Ile Leu				
705		710		720
Asp Leu Ala Pro Phe Cys Thr Leu Lys Cys Lys Asn Val Ala Glu Glu				
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Asn Thr Arg Val Leu Tyr Ser Leu Tyr Gly Val Val Glu His Ser Gly				
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Thr Met Arg Ser Gly His Tyr Thr Ala Tyr Ala Lys Ala Arg Thr Ala				
	755		760	765
Asn Ser His Leu Ser Asn Leu Val Leu His Gly Asp Ile Pro Gln Asp				
	770		775	780
Phe Glu Met Glu Ser Lys Gly Gln Trp Phe His Ile Ser Asp Thr His				
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<210> 402  
 <211> 2903  
 <212> DNA  
 <213> Homo sapiens

<400> 402

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<210> 403  
 <211> 205  
 <212> PRT  
 <213> Homo sapiens

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 20          25          30
Tyr Gln Arg Gly Ile Tyr Pro Ser Glu Thr Phe Thr Arg Val Gln Lys
 35          40          45
Tyr Gly Leu Thr Leu Leu Val Thr Thr Asp Leu Glu Leu Ile Lys Tyr
 50          55          60
Leu Asn Asn Val Val Glu Gln Leu Lys Asp Trp Leu Tyr Lys Cys Ser
 65          70          75          80
Val Gln Lys Leu Val Val Val Ile Ser Asn Ile Glu Ser Gly Glu Val
 85          90          95
Leu Glu Arg Trp Gln Phe Asp Ile Glu Cys Asp Lys Thr Ala Lys Asp
100          105          110
Asp Ser Ala Pro Arg Glu Lys Ser Gln Lys Ala Ile Gln Asp Glu Ile
115          120          125
Arg Ser Val Ile Arg Gln Ile Thr Ala Thr Val Thr Phe Leu Pro Leu
130          135          140
Leu Glu Val Ser Cys Ser Phe Asp Leu Leu Ile Tyr Thr Asp Lys Asp
145          150          155          160
Leu Val Val Pro Glu Lys Trp Glu Glu Ser Gly Pro Gln Phe Ile Thr
165          170          175
Asn Ser Glu Glu Val Arg Leu Arg Ser Phe Thr Thr Thr Ile His Lys
180          185          190
Val Asn Ser Met Val Ala Tyr Lys Ile Pro Val Asn Asp
195          200          205

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<210> 404  
 <211> 1390  
 <212> DNA  
 <213> Homo sapiens

<400> 404

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<210> 405

<211> 464

<212> PRT

<213> Homo sapiens

<400> 405

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 20          25          30
Lys Asn Asp Leu Tyr Pro Asn Pro Lys Pro Glu Val Leu His Met Ile
 35          40          45
Tyr Met Arg Ala Leu Gln Ile Val Tyr Gly Ile Arg Leu Glu His Phe
 50          55          60
Tyr Met Met Pro Val Asn Ser Glu Val Met Tyr Pro His Leu Met Glu
 65          70          75          80
Gly Phe Leu Pro Phe Ser Asn Leu Val Thr His Leu Asp Ser Phe Leu
 85          90          95
Pro Ile Cys Arg Val Asn Asp Phe Glu Thr Ala Asp Ile Leu Cys Pro
100          105          110
Lys Ala Lys Arg Thr Ser Arg Phe Leu Ser Gly Ile Ile Asn Phe Ile
115          120          125
His Phe Arg Glu Ala Cys Arg Glu Thr Tyr Met Glu Phe Leu Trp Gln
130          135          140
Tyr Lys Ser Ser Ala Asp Lys Met Gln Gln Leu Asn Ala Ala His Gln
145          150          155          160
Glu Ala Leu Met Lys Leu Glu Arg Leu Asp Ser Val Pro Val Glu Glu
165          170          175
Gln Glu Glu Phe Lys Gln Leu Ser Asp Gly Ile Gln Glu Leu Gln Gln
180          185          190
Ser Leu Asn Gln Asp Phe His Gln Lys Thr Ile Val Leu Gln Glu Gly
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195	200	205
Asn Ser Gln Lys Lys Ser	Asn Ile Ser Glu Lys Thr	Lys Arg Leu Asn
210	215	220
Glu Leu Lys Leu Leu Val Val	Ser Leu Lys Glu Ile Gln Glu Ser Leu	
225	230	235
Lys Thr Lys Ile Val Asp Ser Pro	Glu Lys Leu Lys Asn Tyr Lys Glu	240
	245	250
Lys Met Lys Asp Thr Val Gln Lys	Leu Lys Asn Ala Arg Gln Glu Val	255
260	265	270
Val Glu Lys Tyr Glu Ile Tyr Gly	Asp Ser Val Asp Cys Leu Pro Ser	
275	280	285
Cys Gln Leu Glu Val Gln Leu Tyr	Gln Lys Lys Ile Gln Asp Leu Ser	
290	295	300
Asp Asn Arg Glu Lys Leu Ala Ser	Ile Leu Lys Glu Ser Leu Asn Leu	
305	310	315
Glu Asp Gln Ile Glu Ser Asp Glu	Ser Glu Leu Lys Lys Leu Lys Thr	
	325	330
Glu Glu Asn Ser Phe Lys Arg Leu	Met Ile Val Lys Lys Glu Lys Leu	
340	345	350
Ala Thr Ala Gln Phe Lys Ile Asn	Lys Lys His Glu Asp Val Lys Gln	
355	360	365
Tyr Lys Arg Thr Val Ile Glu Asp	Cys Asn Lys Val Gln Glu Lys Arg	
370	375	380
Gly Ala Val Tyr Glu Arg Val Thr	Thr Ile Asn Gln Glu Ile Gln Lys	
385	390	395
Ile Lys Leu Gly Ile Gln Gln Leu	Lys Asp Ala Ala Glu Arg Glu Lys	
	405	410
Leu Lys Ser Gln Glu Ile Phe Leu	Asn Leu Lys Thr Ala Leu Glu Lys	
420	425	430
Tyr His Asp Gly Ile Glu Lys Ala	Ala Glu Asp Ser Tyr Ala Lys Ile	
435	440	445
Asp Glu Lys Thr Ala Glu Leu Lys	Arg Lys Met Phe Lys Met Ser Thr	
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<210> 406  
 <211> 1857  
 <212> DNA  
 <213> Homo sapiens

<400> 406  
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 agttaagaa ttataaagaa aaaatgaaag atacggtcca gaagcttaaa aatgccagac 960



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tagttacctt tgaaatatat atattttttt ctgttaaaaa aaaaaaaaaa aaaaaaa 1857

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<210> 407  
 <211> 1050  
 <212> PRT  
 <213> Homo sapiens

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<400> 407
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Leu Glu Gly Asp Glu Trp Glu Leu Ser Lys Glu Asn Val Gln Pro Leu
20          25          30
Arg Gln Gly Arg Ile Met Ser Thr Leu Gln Gly Ala Leu Ala Gln Glu
35          40          45
Ser Ala Cys Asn Asn Thr Leu Gln Gln Gln Lys Arg Ala Phe Glu Tyr
50          55          60
Glu Ile Arg Phe Tyr Thr Gly Asn Asp Pro Leu Asp Val Trp Asp Arg
65          70          75          80
Tyr Ile Ser Trp Thr Glu Gln Asn Tyr Pro Gln Gly Gly Lys Glu Ser
85          90          95
Asn Met Ser Thr Leu Leu Glu Arg Ala Val Glu Ala Leu Gln Gly Glu
100         105         110
Lys Arg Tyr Tyr Ser Asp Pro Arg Phe Leu Asn Leu Trp Leu Lys Leu
115         120         125
Gly Arg Leu Cys Asn Glu Pro Leu Asp Met Tyr Ser Tyr Leu His Asn
130         135         140
Gln Gly Ile Gly Val Ser Leu Ala Gln Phe Tyr Ile Ser Trp Ala Glu
145         150         155         160
Glu Tyr Glu Ala Arg Glu Asn Phe Arg Lys Ala Asp Ala Ile Phe Gln
165         170         175
Glu Gly Ile Gln Gln Lys Ala Glu Pro Leu Glu Arg Leu Gln Ser Gln
180         185         190
His Arg Gln Phe Gln Ala Arg Val Ser Arg Gln Thr Leu Leu Ala Leu
195         200         205
Glu Lys Glu Glu Glu Glu Glu Val Phe Glu Ser Ser Val Pro Gln Arg
210         215         220
Ser Thr Leu Ala Glu Leu Lys Ser Lys Gly Lys Lys Thr Ala Arg Ala
225         230         235         240
Pro Ile Ile Arg Val Gly Gly Ala Leu Lys Ala Pro Ser Gln Asn Arg
245         250         255
Gly Leu Gln Asn Pro Phe Pro Gln Gln Met Gln Asn Asn Ser Arg Ile
260         265         270
Thr Val Phe Asp Glu Asn Ala Asp Glu Ala Ser Thr Ala Glu Leu Ser

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Leu Ser Ala Ser Ala Glu Leu Cys Ile Glu Asp Arg Pro Met Pro Lys  
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 Leu Glu Ile Glu Lys Glu Ile Glu Leu Gly Asn Glu Asp Tyr Cys Ile  
 755 760 765  
 Lys Arg Glu Tyr Leu Ile Cys Glu Asp Tyr Lys Leu Phe Trp Val Ala  
 770 775 780  
 Pro Arg Asn Ser Ala Glu Leu Thr Val Ile Lys Val Ser Ser Gln Pro  
 785 790 795 800  
 Val Pro Trp Asp Phe Tyr Ile Asn Leu Lys Leu Lys Glu Arg Leu Asn  
 805 810 815  
 Glu Asp Phe Asp His Phe Cys Ser Cys Tyr Gln Tyr Gln Asp Gly Cys  
 820 825 830  
 Ile Val Trp His Gln Tyr Ile Asn Cys Phe Thr Leu Gln Asp Leu Leu  
 835 840 845  
 Gln His Ser Glu Tyr Ile Thr His Glu Ile Thr Val Leu Ile Ile Tyr  
 850 855 860  
 Asn Leu Leu Thr Ile Val Glu Met Leu His Lys Ala Glu Ile Val His  
 865 870 875 880  
 Gly Asp Leu Ser Pro Arg Cys Leu Ile Leu Arg Asn Arg Ile His Asp  
 885 890 895  
 Pro Tyr Asp Cys Asn Lys Asn Asn Gln Ala Leu Lys Ile Val Asp Phe  
 900 905 910  
 Ser Tyr Ser Val Asp Leu Arg Val Gln Leu Asp Val Phe Thr Leu Ser  
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 Gly Phe Arg Thr Val Gln Ile Leu Glu Gly Gln Lys Ile Leu Ala Asn  
 930 935 940  
 Cys Ser Ser Pro Tyr Gln Val Asp Leu Phe Gly Ile Ala Asp Leu Ala  
 945 950 955 960  
 His Leu Leu Leu Phe Lys Glu His Leu Gln Val Phe Trp Asp Gly Ser  
 965 970 975  
 Phe Trp Lys Leu Ser Gln Asn Ile Ser Glu Leu Lys Asp Gly Glu Leu  
 980 985 990  
 Trp Asn Lys Phe Phe Val Arg Ile Leu Asn Ala Asn Asp Glu Ala Thr  
 995 1000 1005  
 Val Ser Val Leu Gly Glu Leu Ala Ala Glu Met Asn Gly Val Phe Asp  
 1010 1015 1020  
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 1045 1050

<210> 408  
 <211> 3702  
 <212> DNA  
 <213> Homo sapiens

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 ccctggaggg agatgaatgg gaactgagta aagaaaatgt acaaccttta aggcaagggc 240  
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<210> 409

<211> 164

<212> PRT

<213> Homo sapiens

<400> 409

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			20					25					30		
Glu	His	Ala	Thr	Ala	Pro	Thr	Arg	Gly	Ser	Ala	Arg	Ala	Ala	Gly	Tyr
		35					40					45			
Asp	Leu	Tyr	Ser	Ala	Tyr	Asp	Tyr	Thr	Ile	Pro	Pro	Met	Glu	Lys	Ala
	50					55				60					
Val	Val	Lys	Thr	Asp	Ile	Gln	Ile	Ala	Leu	Pro	Ser	Gly	Cys	Tyr	Gly
65					70				75					80	
Arg	Val	Ala	Pro	Arg	Ser	Gly	Leu	Ala	Ala	Lys	His	Phe	Ile	Asp	Val
				85				90						95	
Gly	Ala	Gly	Val	Ile	Asp	Glu	Asp	Tyr	Arg	Gly	Asn	Val	Gly	Val	Val
			100					105					110		
Leu	Phe	Asn	Phe	Gly	Lys	Glu	Lys	Phe	Glu	Val	Lys	Lys	Gly	Asp	Arg
		115					120						125		
Ile	Ala	Gln	Leu	Ile	Cys	Glu	Arg	Ile	Phe	Tyr	Pro	Glu	Ile	Glu	Glu
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Val	Gln	Ala	Leu	Asp	Asp	Thr	Glu	Arg	Gly	Ser	Gly	Gly	Phe	Gly	Ser
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Thr	Gly	Lys	Asn												

<210> 410

<211> 1816

<212> DNA

<213> Homo sapiens

<400> 410

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<210> 411
<211> 1388
<212> PRT
<213> Homo sapiens

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 20          25          30
Ile Arg Pro Pro Ala Glu Arg Ser Gly Ser Ala Asp Gly Glu Gln Asn
 35          40          45
Leu Cys Leu Ser Val Leu Ser Ser Thr Ser Leu Arg Leu His Ser Asn
 50          55          60
Pro Glu Pro Lys Thr Phe Thr Phe Asp His Val Ala Asp Val Asp Thr
 65          70          75          80
Thr Gln Glu Ser Val Phe Ala Thr Val Ala Lys Ser Ile Val Glu Ser
 85          90          95
Cys Met Ser Gly Tyr Asn Gly Thr Ile Phe Ala Tyr Gly Gln Thr Gly
100          105          110
Ser Gly Lys Thr Phe Thr Met Met Gly Pro Ser Glu Ser Asp Asn Phe
115          120          125
Ser His Asn Leu Arg Gly Val Ile Pro Arg Ser Phe Glu Tyr Leu Phe
130          135          140
Ser Leu Ile Asp Arg Glu Lys Glu Lys Ala Gly Ala Gly Lys Ser Phe
145          150          155          160
Leu Cys Lys Cys Ser Phe Ile Glu Ile Tyr Asn Glu Gln Ile Tyr Asp
165          170          175
Leu Leu Asp Ser Ala Ser Ala Gly Leu Tyr Leu Arg Glu His Ile Lys
180          185          190
Lys Gly Val Phe Val Val Gly Ala Val Glu Gln Val Val Thr Ser Ala
195          200          205
Ala Glu Ala Tyr Gln Val Leu Ser Gly Gly Trp Arg Asn Arg Arg Val
210          215          220
Ala Ser Thr Ser Met Asn Arg Glu Ser Ser Arg Ser His Ala Val Phe
225          230          235          240
Thr Ile Thr Ile Glu Ser Met Glu Lys Ser Asn Glu Ile Val Asn Ile
245          250          255
Arg Thr Ser Leu Leu Asn Leu Val Asp Leu Ala Gly Ser Glu Arg Gln
260          265          270
Lys Asp Thr His Ala Glu Gly Met Arg Leu Lys Glu Ala Gly Asn Ile
275          280          285
Asn Arg Ser Leu Ser Cys Leu Gly Gln Val Ile Thr Ala Leu Val Asp
290          295          300
Val Gly Asn Gly Lys Gln Arg His Val Cys Tyr Arg Asp Ser Lys Leu
305          310          315          320
Thr Phe Leu Leu Arg Asp Ser Leu Gly Gly Asn Ala Lys Thr Ala Ile
325          330          335
Ile Ala Asn Val His Pro Gly Ser Arg Cys Phe Gly Glu Thr Leu Ser

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<212> PRT

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Glu	Val	Ser	Val	Arg	Thr	Gly	Gly	Leu	Ala	Asp	Lys	Ser	Ser	Arg	Lys	50	55	60
Thr	Tyr	Thr	Phe	Asp	Met	Val	Phe	Gly	Ala	Ser	Thr	Lys	Gln	Ile	Asp	65	70	75
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Ala	His	Arg	Ala	Lys	Asn	Ile	Leu	Asn	Lys	Pro	Glu	Val	Asn	Gln	Lys	355	360	365
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Glu	Gln	Ile	Val	Glu	Leu	Ile	Glu	Lys	Ile	Gly	Ala	Val	Glu	Glu	Glu	420	425	430
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Gln	Cys	Lys	Ser	Asp	Leu	Gln	Asn	Lys	Thr	Gln	Glu	Leu	Glu	Thr	Thr	450	455	460
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Gln Arg Cys Glu Ser Leu Asn Thr Arg Thr Val Tyr Phe Ser Glu Gln						
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<210> 415

<211> 398

<212> PRT

<213> Homo sapiens

<400> 415

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35	40	45	
Val Ala Lys Lys Ala Gln Asn Thr Lys Val Pro Val Gln Pro Thr Lys			
50	55	60	
Thr Thr Asn Val Asn Lys Gln Leu Lys Pro Thr Ala Ser Val Lys Pro			
65	70	75	80
Val Gln Met Glu Lys Leu Ala Pro Lys Gly Pro Ser Pro Thr Pro Glu			
85	90	95	
Asp Val Ser Met Lys Glu Glu Asn Leu Cys Gln Ala Phe Ser Asp Ala			
100	105	110	
Leu Leu Cys Lys Ile Glu Asp Ile Asp Asn Glu Asp Trp Glu Asn Pro			
115	120	125	
Gln Leu Cys Ser Asp Tyr Val Lys Asp Ile Tyr Gln Tyr Leu Arg Gln			
130	135	140	
Leu Glu Val Leu Gln Ser Ile Asn Pro His Phe Leu Asp Gly Arg Asp			
145	150	155	160
Ile Asn Gly Arg Met Arg Ala Ile Leu Val Asp Trp Leu Val Gln Val			
165	170	175	
His Ser Lys Phe Arg Leu Leu Gln Glu Thr Leu Tyr Met Cys Val Gly			
180	185	190	
Ile Met Asp Arg Phe Leu Gln Val Gln Pro Val Ser Arg Lys Lys Leu			
195	200	205	
Gln Leu Val Gly Ile Thr Ala Leu Leu Leu Ala Ser Lys Tyr Glu Glu			
210	215	220	
Met Phe Ser Pro Asn Ile Glu Asp Phe Val Tyr Ile Thr Asp Asn Ala			
225	230	235	240
Tyr Thr Ser Ser Gln Ile Arg Glu Met Glu Thr Leu Ile Leu Lys Glu			
245	250	255	
Leu Lys Phe Glu Leu Gly Arg Pro Leu Pro Leu His Phe Leu Arg Arg			
260	265	270	
Ala Ser Lys Ala Gly Glu Val Asp Val Glu Gln His Thr Leu Ala Lys			
275	280	285	
Tyr Leu Met Glu Leu Thr Leu Ile Asp Tyr Asp Met Val His Tyr His			
290	295	300	
Pro Ser Lys Val Ala Ala Ala Ala Ser Cys Leu Ser Gln Lys Val Leu			
305	310	315	320
Gly Gln Gly Lys Trp Asn Leu Lys Gln Gln Tyr Tyr Thr Gly Tyr Thr			
325	330	335	
Glu Asn Glu Val Leu Glu Val Met Gln His Met Ala Lys Asn Val Val			
340	345	350	
Lys Val Asn Glu Asn Leu Thr Lys Phe Ile Ala Ile Lys Asn Lys Tyr			
355	360	365	
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 <212> DNA  
 <213> Homo sapiens  
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<210> 417  
 <211> 543  
 <212> PRT  
 <213> Homo sapiens

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<400> 417
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20          25          30
Ser Gln Ser Gln Gly Ile Ser Ser Ser Ser Thr Ser Thr Met Pro Asn
35          40          45
Ser Ser Gln Ser Ser His Ser Ser Ser Gly Thr Leu Ser Ser Leu Glu
50          55          60
Thr Val Ser Thr Gln Glu Leu Tyr Ser Ile Pro Glu Asp Gln Glu Pro
65          70          75          80
Glu Asp Gln Glu Pro Glu Glu Pro Thr Pro Ala Pro Trp Ala Arg Leu
85          90          95
Trp Ala Leu Gln Asp Gly Phe Ala Asn Leu Glu Cys Val Asn Asp Asn
100         105         110
Tyr Trp Phe Gly Arg Asp Lys Ser Cys Glu Tyr Cys Phe Asp Glu Pro
115         120         125
Leu Leu Lys Arg Thr Asp Lys Tyr Arg Thr Tyr Ser Lys Lys His Phe
130         135         140
Arg Ile Phe Arg Glu Val Gly Pro Lys Asn Ser Tyr Ile Ala Tyr Ile
145         150         155         160
Glu Asp His Ser Gly Asn Gly Thr Phe Val Asn Thr Glu Leu Val Gly
165         170         175
Lys Gly Lys Arg Arg Pro Leu Asn Asn Asn Ser Glu Ile Ala Leu Ser
180         185         190

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225					230					235					240		
Lys	Thr	Cys	Lys	Lys	Val	Ala	Ile	Lys	Ile	Ile	Ser	Lys	Arg	Lys	Phe		
			245						250					255			
Ala	Ile	Gly	Ser	Ala	Arg	Glu	Ala	Asp	Pro	Ala	Leu	Asn	Val	Glu	Thr		
			260					265					270				
Glu	Ile	Glu	Ile	Leu	Lys	Lys	Leu	Asn	His	Pro	Cys	Ile	Ile	Lys	Ile		
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Lys	Asn	Phe	Phe	Asp	Ala	Glu	Asp	Tyr	Tyr	Ile	Val	Leu	Glu	Leu	Met		
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Thr	Ala	Gly	Tyr	Asn	Arg	Ala	Val	Asp	Cys	Trp	Ser	Leu	Gly	Val	Ile		
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			420					425					430				
Gln	Val	Ser	Leu	Lys	Asp	Gln	Ile	Thr	Ser	Gly	Lys	Tyr	Asn	Phe	Ile		
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Pro	Glu	Val	Trp	Ala	Glu	Val	Ser	Glu	Lys	Ala	Leu	Asp	Leu	Val	Lys		
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Lys	Leu	Leu	Val	Val	Asp	Pro	Lys	Ala	Arg	Phe	Thr	Thr	Glu	Glu	Ala		
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				485					490					495			
Asp	Leu	Leu	Ser	Glu	Glu	Asn	Glu	Ser	Thr	Ala	Leu	Pro	Gln	Val	Leu		
			500					505					510				
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 <212> DNA  
 <213> Homo sapiens

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<210> 419  
 <211> 297  
 <212> PRT  
 <213> Homo sapiens

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 20           25           30
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 35           40           45
Ile Arg Glu Ile Ser Leu Leu Lys Glu Leu Arg His Pro Asn Ile Val
 50           55           60
Ser Leu Gln Asp Val Leu Met Gln Asp Ser Arg Leu Tyr Leu Ile Phe
 65           70           75           80
Glu Phe Leu Ser Met Asp Leu Lys Lys Tyr Leu Asp Ser Ile Pro Pro
 85           90           95

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		115					120					125			
Leu	Lys	Pro	Gln	Asn	Leu	Leu	Ile	Asp	Asp	Lys	Gly	Thr	Ile	Lys	Leu
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145					150					155					160
Thr	His	Glu	Val	Val	Thr	Leu	Trp	Tyr	Arg	Ser	Pro	Glu	Val	Leu	Leu
			165					170						175	
Gly	Ser	Ala	Arg	Tyr	Ser	Thr	Pro	Val	Asp	Ile	Trp	Ser	Ile	Gly	Thr
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Phe	Pro	Lys	Trp	Lys	Pro	Gly	Ser	Leu	Ala	Ser	His	Val	Lys	Asn	Leu
			245						250					255	
Asp	Glu	Asn	Gly	Leu	Asp	Leu	Leu	Ser	Lys	Met	Leu	Ile	Tyr	Asp	Pro
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 <212> DNA  
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 gtgtataagg gtagacacaa aactacaggt caagtggtag ccatgaaaaa aatcagacta 240  
 gaaagtgaag aggaaggggt tcctagtact gcaattcggg aaatttctct attaaaggaa 300  
 ctctgtcatc caaatatagt cagtcttcag gatgtgctta tgcaggattc caggttatat 360  
 ctcatctttg agtttctttc catggatctg aagaaatact tggattctat ccctcctggg 420  
 cagtacatgg attcttcaact tgtaagagt tatttatacc aaatcctaca ggggattgtg 480  
 ttttgtcact ctagaagagt tcttcacaga gacttaaaac ctcaaaatct cttgattgat 540  
 gacaaaggaa caattaaact ggctgatttt ggcttgcca gagcttttgg aatacctatc 600  
 agagtatata cacatgaggt agtaacactc tggtagatag ctccagaagt attgctgggg 660  
 tcagctcggt actcaactcc agttgacatt tggagtatag gcaccatatt tgctgaacta 720  
 gcaactaaga aaccactttt ccatggggat tcagaaattg atcaactctt caggattttc 780  
 agagcttttg gcaactccaa taatgaagtg tggccagaag tggaatcttt acaggactat 840  
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 gaaaatgggt tggatttggc ctcgaaaatg ttaatctatg atccagccaa acgaatttct 960  
 ggcaaaatgg cactgaatca tccatatttt aatgatttgg acaatcagat taagaagatg 1020  
 tagctttctg acaaaaagtt tccatattgt atgtcaacag atagttgtgt ttttattgtt 1080  
 aactcttgtc tatttttgtc ttatatatat ttctttgtta tcaaaacttca gctgtacttc 1140  
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<210> 421

<211> 240  
 <212> PRT  
 <213> Homo sapiens

<400> 421  
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 Val Val Tyr Lys Gly Arg His Lys Thr Thr Gly Gln Val Val Ala Met  
           20                  25                  30  
 Lys Lys Ile Arg Leu Glu Ser Glu Glu Glu Gly Val Pro Ser Thr Ala  
           35                  40                  45  
 Ile Arg Glu Ile Ser Leu Leu Lys Glu Leu Arg His Pro Asn Ile Val  
   50                  55                  60  
 Ser Leu Gln Asp Val Leu Met Gln Asp Ser Arg Leu Tyr Leu Ile Phe  
 65                  70                  75                  80  
 Glu Phe Leu Ser Met Asp Leu Lys Lys Tyr Leu Asp Ser Ile Pro Pro  
           85                  90                  95  
 Gly Gln Tyr Met Asp Ser Ser Leu Val Lys Val Val Thr Leu Trp Tyr  
          100                 105                 110  
 Arg Ser Pro Glu Val Leu Leu Gly Ser Ala Arg Tyr Ser Thr Pro Val  
          115                 120                 125  
 Asp Ile Trp Ser Ile Gly Thr Ile Phe Ala Glu Leu Ala Thr Lys Lys  
  130                 135                 140  
 Pro Leu Phe His Gly Asp Ser Glu Ile Asp Gln Leu Phe Arg Ile Phe  
 145                 150                 155                 160  
 Arg Ala Leu Gly Thr Pro Asn Asn Glu Val Trp Pro Glu Val Glu Ser  
          165                 170                 175  
 Leu Gln Asp Tyr Lys Asn Thr Phe Pro Lys Trp Lys Pro Gly Ser Leu  
          180                 185                 190  
 Ala Ser His Val Lys Asn Leu Asp Glu Asn Gly Leu Asp Leu Leu Ser  
          195                 200                 205  
 Lys Met Leu Ile Tyr Asp Pro Ala Lys Arg Ile Ser Gly Lys Met Ala  
  210                 215                 220  
 Leu Asn His Pro Tyr Phe Asn Asp Leu Asp Asn Gln Ile Lys Lys Met  
 225                 230                 235                 240

<210> 422  
 <211> 948  
 <212> DNA  
 <213> Homo sapiens

<400> 422  
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 actagaaagt gaagaggaag gggttcctag tactgcaatt cgggaaattt ctctattaa 180  
 ggaacttcgt catccaaata tagtcagtct tcaggatgtg cttatgcagg attccagggt 240  
 atatctcatc tttgagtttc tttccatgga tctgaagaaa tacttggatt ctatccctcc 300  
 tggtcagtac atggattctt cacttggttaa ggtagtaaca ctctggtaca gatctccaga 360  
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 atttgctgaa ctagcaacta agaaaccact tttccatggg gattcagaaa ttgatcaact 480  
 tttcaggatt ttcagagctt tgggcactcc caataatgaa gtgtggccag aagtggaatc 540  
 cttacaggac tataagaata catttcccaa atggaaacca ggaagcctag catcccatgt 600  
 caaaaacttg gatgaaaatg gcttggattt gctctcgaaa atgttaatct atgatccagc 660  
 caaacgaatt tctggcaaaa tggcactgaa tcatccatat tttaatgatt tggacaatca 720  
 gattaagaag atgtagcttt ctgacaaaaa gtttccatat gttatgtcaa cagatagttg 780  
 tgtttttatt gttaactctt gtctattttt gtcttatata tatttctttg ttatcaaact 840

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 gaatttaaata ataattctgt aaatgtgaaa aaaaaaaaaa aaaaaaaa 948

<210> 423  
 <211> 433  
 <212> PRT  
 <213> Homo sapiens

<400> 423  
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 20 25 30  
 Ala Thr Ser Lys Pro Gly Leu Arg Pro Arg Thr Ala Leu Gly Asp Ile  
 35 40 45  
 Gly Asn Lys Val Ser Glu Gln Leu Gln Ala Lys Met Pro Met Lys Lys  
 50 55 60  
 Glu Ala Lys Pro Ser Ala Thr Gly Lys Val Ile Asp Lys Lys Leu Pro  
 65 70 75 80  
 Lys Pro Leu Glu Lys Val Pro Met Leu Val Pro Val Pro Val Ser Glu  
 85 90 95  
 Pro Val Pro Glu Pro Glu Pro Glu Pro Glu Pro Glu Pro Val Lys Glu  
 100 105 110  
 Glu Lys Leu Ser Pro Glu Pro Ile Leu Val Asp Thr Ala Ser Pro Ser  
 115 120 125  
 Pro Met Glu Thr Ser Gly Cys Ala Pro Ala Glu Glu Asp Leu Cys Gln  
 130 135 140  
 Ala Phe Ser Asp Val Ile Leu Ala Val Asn Asp Val Asp Ala Glu Asp  
 145 150 155 160  
 Gly Ala Asp Pro Asn Leu Cys Ser Glu Tyr Val Lys Asp Ile Tyr Ala  
 165 170 175  
 Tyr Leu Arg Gln Leu Glu Glu Glu Gln Ala Val Arg Pro Lys Tyr Leu  
 180 185 190  
 Leu Gly Arg Glu Val Thr Gly Asn Met Arg Ala Ile Leu Ile Asp Trp  
 195 200 205  
 Leu Val Gln Val Gln Met Lys Phe Arg Leu Leu Gln Glu Thr Met Tyr  
 210 215 220  
 Met Thr Val Ser Ile Ile Asp Arg Phe Met Gln Asn Asn Cys Val Pro  
 225 230 235 240  
 Lys Lys Met Leu Gln Leu Val Gly Val Thr Ala Met Phe Ile Ala Ser  
 245 250 255  
 Lys Tyr Glu Glu Met Tyr Pro Pro Glu Ile Gly Asp Phe Ala Phe Val  
 260 265 270  
 Thr Asp Asn Thr Tyr Thr Lys His Gln Ile Arg Gln Met Glu Met Lys  
 275 280 285  
 Ile Leu Arg Ala Leu Asn Phe Gly Leu Gly Arg Pro Leu Pro Leu His  
 290 295 300  
 Phe Leu Arg Arg Ala Ser Lys Ile Gly Glu Val Asp Val Glu Gln His  
 305 310 315 320  
 Thr Leu Ala Lys Tyr Leu Met Glu Leu Thr Met Leu Asp Tyr Asp Met  
 325 330 335  
 Val His Phe Pro Pro Ser Gln Ile Ala Ala Gly Ala Phe Cys Leu Ala  
 340 345 350  
 Leu Lys Ile Leu Asp Asn Gly Glu Trp Thr Pro Thr Leu Gln His Tyr  
 355 360 365  
 Leu Ser Tyr Thr Glu Glu Ser Leu Leu Pro Val Met Gln His Leu Ala  
 370 375 380

Lys Asn Val Val Met Val Asn Gln Gly Leu Thr Lys His Met Thr Val  
 385 390 395 400  
 Lys Asn Lys Tyr Ala Thr Ser Lys His Ala Lys Ile Ser Thr Leu Pro  
 405 410 415  
 Gln Leu Asn Ser Ala Leu Val Gln Asp Leu Ala Lys Ala Val Ala Lys  
 420 425 430  
 Val

<210> 424  
 <211> 2101  
 <212> DNA  
 <213> Homo sapiens

<400> 424  
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 cgggcctcog gtgttctgct tctccccgct gagctgctgc ctggtgaaga ggaagccatg 180  
 gcgctccgag tcaccaggaa ctcgaaaatt aatgctgaaa ataaggcgaa gatcaacatg 240  
 gcaggcgcaa agcgcgttcc tacggccccct gctgcaacct ccaagcccgg actgaggcca 300  
 agaacagctc ttggggacat tggtaacaaa gtcagtgaac aactgcaggc caaaatgcct 360  
 atgaagaagg aagcaaaacc ttcagctact ggaaaagtca ttgataaaaa actaccaaaa 420  
 cctcttgaaa aggtacctat gctggtgcca gtgccagtg ctgagccagt gccagagcca 480  
 gaacctgagc cagaacctga gcctgttaaa gaagaaaaac tttcgctga gcctattttg 540  
 gttgatactg cctctccaag cccaatggaa acatctggat gtgcccctgc agaagaagac 600  
 ctgtgtcagg ctttctctga tgtaattctt gcagtaaatg atgtggatgc agaagatgga 660  
 gctgatccaa acctttgtag tgaatatgtg aaagatatatt atgcttatct gagacaactt 720  
 gaggaagagc aagcagtcag accaaaatac ctactgggtc gggaagtcac tggaaacatg 780  
 agagccatcc taattgactg gctagtacag gttcaaataa aattcagggt gttgcaggag 840  
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 aagatgctgc agctgggttg tgctactgcc atgtttattg caagcaaata tgaagaaatg 960  
 taccctccag aaattgggtga ctttgccttt gtgactgaca acacttatac taagcaccaa 1020  
 atcagacaga tggaaatgaa gattctaaga gctttaaact ttggtctggg tcggcctcta 1080  
 cctttgcact tccttcggag agcatctaag attggagagg ttgatgtcga gcaacatact 1140  
 ttggccaaat acctgatgga actaactatg ttggactatg acatgggtgca ctttctctct 1200  
 tctcaaattg cagcaggagc tttttgctta gcaactgaaa ttctggataa tggatgaatgg 1260  
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 tacttctac tgtagggtag cggaaaagtt gtcttaaaag gtatgggtggg gatattttta 1680  
 aaaactcctt ttggtttacc tggggatcca attgatgtat atgtttatat actgggttct 1740  
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 atagctctat tttaaagtaa agtctaacca ccgaatccct agtccccctg ttttctgttt 1920  
 cttcttgtga ttgctgccat aattctaagt tatttacttt taccactatt taagttatca 1980  
 acttttagcta gtatcttcaa actttcactt tgaaaaatga gaattttata ttctaagcca 2040  
 gttttcattt tggttttgtg ttttggttaa taaaacaata ctcaaataca aaaaaaaaaa 2100  
 a 2101

<210> 425  
 <211> 665  
 <212> PRT  
 <213> Homo sapiens

<400> 425

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Ala	Ser	Ala	Ala	Ala	Ile	Ser	Gly	Ala	Gly	Arg	Cys	Arg	Leu	Ser	Lys
			20					25					30		
Ile	Gly	Ala	Thr	Arg	Arg	Pro	Pro	Pro	Ala	Arg	Val	Arg	Val	Ala	Val
		35					40					45			
Arg	Leu	Arg	Pro	Phe	Val	Asp	Gly	Thr	Ala	Gly	Ala	Ser	Asp	Pro	Pro
	50					55					60				
Cys	Val	Arg	Gly	Met	Asp	Ser	Cys	Ser	Leu	Glu	Ile	Ala	Asn	Trp	Arg
65					70					75					80
Asn	His	Gln	Glu	Thr	Leu	Lys	Tyr	Gln	Phe	Asp	Ala	Phe	Tyr	Gly	Glu
				85					90					95	
Arg	Ser	Thr	Gln	Gln	Asp	Ile	Tyr	Ala	Gly	Ser	Val	Gln	Pro	Ile	Leu
			100					105					110		
Arg	His	Leu	Glu	Gly	Gln	Asn	Ala	Ser	Val	Leu	Ala	Tyr	Gly	Pro	
		115				120					125				
Thr	Gly	Ala	Gly	Lys	Thr	His	Thr	Met	Leu	Gly	Ser	Pro	Glu	Gln	Pro
	130					135					140				
Gly	Val	Ile	Pro	Arg	Ala	Leu	Met	Asp	Leu	Leu	Gln	Leu	Thr	Arg	Glu
145					150					155					160
Glu	Gly	Ala	Glu	Gly	Arg	Pro	Trp	Ala	Leu	Ser	Val	Thr	Met	Ser	Tyr
			165					170						175	
Leu	Glu	Ile	Tyr	Gln	Glu	Lys	Val	Leu	Asp	Leu	Leu	Asp	Pro	Ala	Ser
		180						185				190			
Gly	Asp	Leu	Val	Ile	Arg	Glu	Asp	Cys	Arg	Gly	Asn	Ile	Leu	Ile	Pro
	195					200					205				
Gly	Leu	Ser	Gln	Lys	Pro	Ile	Ser	Ser	Phe	Ala	Asp	Phe	Glu	Arg	His
	210					215					220				
Phe	Leu	Pro	Ala	Ser	Arg	Asn	Arg	Thr	Val	Gly	Ala	Thr	Arg	Leu	Asn
225					230					235					240
Gln	Arg	Ser	Ser	Arg	Ser	His	Ala	Val	Leu	Val	Lys	Val	Asp	Gln	
			245						250				255		
Arg	Glu	Arg	Leu	Ala	Pro	Phe	Arg	Gln	Arg	Glu	Gly	Lys	Leu	Tyr	Leu
		260						265					270		
Ile	Asp	Leu	Ala	Gly	Ser	Glu	Asp	Asn	Arg	Arg	Thr	Gly	Asn	Lys	Gly
	275						280					285			
Leu	Arg	Leu	Lys	Glu	Ser	Gly	Ala	Ile	Asn	Thr	Ser	Leu	Phe	Val	Leu
	290					295					300				
Gly	Lys	Val	Val	Asp	Ala	Leu	Asn	Gln	Gly	Leu	Pro	Arg	Val	Pro	Tyr
305					310					315					320
Arg	Asp	Ser	Lys	Leu	Thr	Arg	Leu	Leu	Gln	Asp	Ser	Leu	Gly	Gly	Ser
			325						330				335		
Ala	His	Ser	Ile	Leu	Ile	Ala	Asn	Ile	Ala	Pro	Glu	Arg	Arg	Phe	Tyr
		340					345					350			
Leu	Asp	Thr	Val	Ser	Ala	Leu	Asn	Phe	Ala	Ala	Arg	Ser	Lys	Glu	Val
	355						360					365			
Ile	Asn	Arg	Pro	Phe	Thr	Asn	Glu	Ser	Leu	Gln	Pro	His	Ala	Leu	Gly
	370					375					380				
Pro	Val	Lys	Leu	Ser	Gln	Lys	Glu	Leu	Leu	Gly	Pro	Pro	Glu	Ala	Lys
385					390					395					400
Arg	Ala	Arg	Gly	Pro	Glu	Glu	Glu	Glu	Ile	Gly	Ser	Pro	Glu	Pro	Met
			405						410				415		
Ala	Ala	Pro	Ala	Ser	Ala	Ser	Gln	Lys	Leu	Ser	Pro	Leu	Gln	Lys	Leu
		420						425					430		
Ser	Ser	Met	Asp	Pro	Ala	Met	Leu	Glu	Arg	Leu	Leu	Ser	Leu	Asp	Arg

435	440	445
Leu Leu Ala Ser Gln Gly	Ser Gln Gly Ala Pro	Leu Leu Ser Thr Pro
450	455	460
Lys Arg Glu Arg Met Val	Leu Met Lys Thr Val	Glu Glu Lys Asp Leu
465	470	475
Glu Ile Glu Arg Leu Lys	Thr Lys Gln Lys Glu	Leu Glu Ala Lys Met
485	490	495
Leu Ala Gln Lys Ala Glu	Glu Lys Glu Asn His	Cys Pro Thr Met Leu
500	505	510
Arg Pro Leu Ser His Arg	Thr Val Thr Gly Ala	Lys Pro Leu Lys Lys
515	520	525
Ala Val Val Met Pro Leu	Gln Leu Ile Gln Glu	Gln Ala Ala Ser Pro
530	535	540
Asn Ala Glu Ile His Ile	Leu Lys Asn Lys Gly	Arg Lys Arg Lys Leu
545	550	555
Glu Ser Leu Asp Ala Leu	Glu Pro Glu Glu Lys	Ala Glu Asp Cys Trp
565	570	575
Glu Leu Gln Ile Ser Pro	Glu Leu Leu Ala His	Gly Arg Gln Lys Ile
580	585	590
Leu Asp Leu Leu Asn Glu	Gly Ser Ala Arg Asp	Leu Arg Ser Leu Gln
595	600	605
Arg Ile Gly Pro Lys Lys	Ala Gln Leu Ile Val	Gly Trp Arg Glu Leu
610	615	620
His Gly Pro Phe Ser Gln	Val Glu Asp Leu Glu	Arg Val Glu Gly Ile
625	630	635
Thr Gly Lys Gln Met Glu	Ser Phe Leu Lys Ala	Asn Ile Leu Gly Leu
645	650	655
Ala Ala Gly Gln Arg Cys	Gly Ala Ser	
660	665	

<210> 426  
 <211> 2097  
 <212> DNA  
 <213> Homo sapiens

<400> 426  
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 aggcacttgc tggaagggca gaatgccagt gtgcttgcc atggaccac aggagctggg 420  
 aagacgcaca caatgctggg cagcccagag caacctgggg tgatcccgcg ggctctcatg 480  
 gacctctgc agtcacaaag ggaggagggg gccgagggcc ggccatgggc cctttctgtc 540  
 accatgtctt acctagagat ctaccaggag aaggtattag acctcctgga cctgcttcg 600  
 ggagacctgg taatccgaga agactgccgg gggaaatatcc tgattccggg tctctcccag 660  
 aagcccatca gtagctttgc tgatttttag cggcacttcc tgccagccag tcgaaatcgg 720  
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 aaggtggacc agcgggaacg tttggcccca tttcgccagc gagagggaaa actctacctg 840  
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 ctgacacag tctccgact caactttgct gccaggtcca aggaggtgat caatcggcct 1140  
 tttaccaatg agagcctgca gcctcatgcc ttgggacctg ttaagctgtc tcagaaagaa 1200



ttgcttggtc caccagaggc aaagagagcc cgaggccctg aggaagagga gattggggagc 1260  
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 caggggagcc agggggcccc tctgttgagt accccaaagc gagagcggat ggtgctaata 1440  
 aagacagtag aagagaagga cctagagatt gagaggctta agacgaagca aaaagaactg 1500  
 gaggccaaga tgttggtcca gaaggctgag gaaaaggaga accattgtcc cacaatgctc 1560  
 cggccccctt cacatcgcac agtcacaggg gcaaagcccc tgaaaaaggc tgtggtgatg 1620  
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 aataaaggcc ggaagagaaa gctggagtcc ctggatgccc tagagcctga ggagaaggct 1740  
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 aagaaggccc agctaatacgt gggctggcgg gagctccacg gccccttcag ccagggtggag 1920  
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 atcctgggtc tcgcgcggg ccagcgctgt ggcgcctcct gaccgtcgtc tctcactcc 2040  
 gccttttcaa atttttgtat aaccccggtg tgtgtaaata cagtttttgc tccgggtg 2097

<210> 427  
 <211> 209  
 <212> PRT  
 <213> Homo sapiens

<400> 427  
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 20 25 30  
 Ala Ser Gly Ser Leu Val Gly Arg Glu Asn Glu Leu Ser Ala Gly Leu  
 35 40 45  
 Ser Lys Arg Lys His Arg Asn Asp His Leu Thr Ser Thr Thr Ser Ser  
 50 55 60  
 Pro Gly Val Ile Val Pro Glu Ser Ser Glu Asn Lys Asn Leu Gly Gly  
 65 70 75 80  
 Val Thr Gln Glu Ser Phe Asp Leu Met Ile Lys Glu Asn Pro Ser Ser  
 85 90 95  
 Gln Tyr Trp Lys Glu Val Ala Glu Lys Arg Arg Lys Ala Leu Tyr Glu  
 100 105 110  
 Ala Leu Lys Glu Asn Glu Lys Leu His Lys Glu Ile Glu Gln Lys Asp  
 115 120 125  
 Asn Glu Ile Ala Arg Leu Lys Lys Glu Asn Lys Glu Leu Ala Glu Val  
 130 135 140  
 Ala Glu His Val Gln Tyr Met Ala Glu Leu Ile Glu Arg Leu Asn Gly  
 145 150 155 160  
 Glu Pro Leu Asp Asn Phe Glu Ser Leu Asp Asn Gln Glu Phe Asp Ser  
 165 170 175  
 Glu Glu Glu Thr Val Glu Asp Ser Leu Val Glu Asp Ser Glu Ile Gly  
 180 185 190  
 Thr Cys Ala Glu Gly Thr Val Ser Ser Ser Thr Asp Ala Lys Pro Cys  
 195 200 205  
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<210> 428  
 <211> 1224  
 <212> DNA  
 <213> Homo sapiens

<400> 428  
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acgtgcgttc gctacgagga ttgagcgtct ccacccagta agtgggcaag aggcggcagg 180  
aagtgggtac gcagggggcg aaggcgcaca gcctctagac gactcgcttt ccctccggcc 240  
aacctctgaa gccgcgtcct actttgacag ctgcagggcc gcggcctggg cttctgtgct 300  
tcaccatcta cataatgaat ccagtatga agcagaaaca agaagaaatc aaagagaata 360  
taaagaatag ttctgtccca agaagaactc tgaagatgat tcagccttct gcatctggat 420  
ctcttggttg aagagaaaat gagctgtccg caggcttgtc caaaaggaaa catcggaatg 480  
accacttaac atctacaact tccagccctg gggttattgt ccagaatct agtgaaaata 540  
aaaatcttgg aggagtcacc caggagtcct ttgatcttat gattaaagaa aatccatcct 600  
ctcagtattg gaaggaagtg gcagaaaaac ggagaaaggc gctgtatgaa gcacttaagg 660  
aaaatgagaa acttcataaa gaaattgaac aaaaggacaa tgaaattgcc cgctgaaaa 720  
aggagaataa agaactggca gaagtagcag aacatgtaca gtatatggca gagctaatag 780  
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<210> 429  
<211> 79  
<212> PRT  
<213> Homo sapiens

<400> 429  
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Tyr Glu Tyr Arg His Val Met Leu Pro Arg Glu Leu Ser Lys Gln Val  
20 25 30  
Pro Lys Thr His Leu Met Ser Glu Glu Trp Arg Arg Leu Gly Val  
35 40 45  
Gln Gln Ser Leu Gly Trp Val His Tyr Met Ile His Glu Pro Glu Pro  
50 55 60  
His Ile Leu Leu Phe Arg Arg Pro Leu Pro Lys Asp Gln Gln Lys  
65 70 75

<210> 430  
<211> 627  
<212> DNA  
<213> Homo sapiens

<400> 430  
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cggacaagta cttcgacgaa cactacgagt accggcatgt tatgttacc agagaacttt 180  
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acaaatcttt catccatacc tgtgcatgag ctgtattctt cacagcaaca gagctcagtt 480  
aaatgcaact gcaagtaggt tactgtaaga tgtttaagat aaaagtctt ccagtcagtt 540  
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tatgttgcat ttaaaaaaaaa aaaaaaa

627

<210> 431  
 <211> 620  
 <212> PRT  
 <213> Homo sapiens

<400> 431  
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 Glu Asp Gln Arg Leu Gln Arg Thr Glu Val Val Lys Lys His Ile Lys  
 35 40 45  
 Glu Leu Leu Asp Met Met Ile Ala Glu Glu Glu Ser Leu Lys Glu Arg  
 50 55 60  
 Leu Ile Lys Ser Ile Ser Val Cys Gln Lys Glu Leu Asn Thr Leu Cys  
 65 70 75 80  
 Ser Glu Leu His Val Glu Pro Phe Gln Glu Gly Glu Thr Thr Ile  
 85 90 95  
 Leu Gln Leu Glu Lys Asp Leu Arg Thr Gln Val Glu Leu Met Arg Lys  
 100 105 110  
 Gln Lys Lys Glu Arg Lys Gln Glu Leu Lys Leu Leu Gln Glu Gln Asp  
 115 120 125  
 Gln Glu Leu Cys Glu Ile Leu Cys Met Pro His Tyr Asp Ile Asp Ser  
 130 135 140  
 Ala Ser Val Pro Ser Leu Glu Glu Leu Asn Gln Phe Arg Gln His Val  
 145 150 155 160  
 Thr Thr Leu Arg Glu Thr Lys Ala Ser Arg Arg Glu Glu Phe Val Ser  
 165 170 175  
 Ile Lys Arg Gln Ile Ile Leu Cys Met Glu Glu Leu Asp His Thr Pro  
 180 185 190  
 Asp Thr Ser Phe Glu Arg Asp Val Val Cys Glu Asp Glu Asp Ala Phe  
 195 200 205  
 Cys Leu Ser Leu Glu Asn Ile Ala Thr Leu Gln Lys Leu Leu Arg Gln  
 210 215 220  
 Leu Glu Met Gln Lys Ser Gln Asn Glu Ala Val Cys Glu Gly Leu Arg  
 225 230 235 240  
 Thr Gln Ile Arg Glu Leu Trp Asp Arg Leu Gln Ile Pro Glu Glu Glu  
 245 250 255  
 Arg Glu Ala Val Ala Thr Ile Met Ser Gly Ser Lys Ala Lys Val Arg  
 260 265 270  
 Lys Ala Leu Gln Leu Glu Val Asp Arg Leu Glu Glu Leu Lys Met Gln  
 275 280 285  
 Asn Met Lys Lys Val Ile Glu Ala Ile Arg Val Glu Leu Val Gln Tyr  
 290 295 300  
 Trp Asp Gln Cys Phe Tyr Ser Gln Glu Gln Arg Gln Ala Phe Ala Pro  
 305 310 315 320  
 Phe Cys Ala Glu Asp Tyr Thr Glu Ser Leu Leu Gln Leu His Asp Ala  
 325 330 335  
 Glu Ile Val Arg Leu Lys Asn Tyr Tyr Glu Val His Lys Glu Leu Phe  
 340 345 350  
 Glu Gly Val Gln Lys Trp Glu Glu Thr Trp Arg Leu Phe Leu Glu Phe  
 355 360 365  
 Glu Arg Lys Ala Ser Asp Pro Asn Arg Phe Thr Asn Arg Gly Gly Asn  
 370 375 380  
 Leu Leu Lys Glu Glu Lys Gln Arg Ala Lys Leu Gln Lys Met Leu Pro

385		390		395		400									
Lys	Leu	Glu	Glu	Glu	Leu	Lys	Ala	Arg	Ile	Glu	Leu	Trp	Glu	Gln	Glu
		405							410					415	
His	Ser	Lys	Ala	Phe	Met	Val	Asn	Gly	Gln	Lys	Phe	Met	Glu	Tyr	Val
		420						425					430		
Ala	Glu	Gln	Trp	Glu	Met	His	Arg	Leu	Glu	Lys	Glu	Arg	Ala	Lys	Gln
		435						440					445		
Glu	Arg	Gln	Leu	Lys	Asn	Lys	Lys	Gln	Thr	Glu	Thr	Glu	Met	Leu	Tyr
		450						455				460			
Gly	Ser	Ala	Pro	Arg	Thr	Pro	Ser	Lys	Arg	Arg	Gly	Leu	Ala	Pro	Asn
465					470					475				480	
Thr	Pro	Gly	Lys	Ala	Arg	Lys	Leu	Asn	Thr	Thr	Thr	Met	Ser	Asn	Ala
				485					490					495	
Thr	Ala	Asn	Ser	Ser	Ile	Arg	Pro	Ile	Phe	Gly	Gly	Thr	Val	Tyr	His
		500						505					510		
Ser	Pro	Val	Ser	Arg	Leu	Pro	Pro	Ser	Gly	Ser	Lys	Pro	Val	Ala	Ala
		515						520					525		
Ser	Thr	Cys	Ser	Gly	Lys	Lys	Thr	Pro	Arg	Thr	Gly	Arg	His	Gly	Ala
	530					535					540				
Asn	Lys	Glu	Asn	Leu	Glu	Leu	Asn	Gly	Ser	Ile	Leu	Ser	Gly	Gly	Tyr
545					550					555				560	
Pro	Gly	Ser	Ala	Pro	Leu	Gln	Arg	Asn	Phe	Ser	Ile	Asn	Ser	Val	Ala
				565					570					575	
Ser	Thr	Tyr	Ser	Glu	Phe	Ala	Lys	Asp	Pro	Ser	Leu	Ser	Asp	Ser	Ser
		580						585					590		
Thr	Val	Gly	Leu	Gln	Arg	Glu	Leu	Ser	Lys	Ala	Ser	Lys	Ser	Asp	Ala
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<210> 432  
 <211> 3044  
 <212> DNA  
 <213> Homo sapiens

<400> 432  
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 gagctgaaca ctctgtgcag cgagttacat gttgagccat ttcaggaaga aggagagacg 360  
 accatcttgc aactagaaaa agatttgcgc acccaagtgg aattgatgcg aaaacagaaa 420  
 aaggagagaa aacaggaact gaagctactt caagagcaag atcaagaact gtgcgaaatt 480  
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 cagttcaggc aacatgtgac aactttgagg gaaacaaagg cttctaggcg tgaggagttt 600  
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 gtccagaagt gggaagaaac ctggaggctt ttcttagagt ttgagagaaa agcttcagat 1200

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<210> 433  
 <211> 313  
 <212> PRT  
 <213> Homo sapiens

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<400> 433
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 20           25           30
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 35           40           45
Asp Arg Thr Gly Thr Gly Thr Leu Ser Val Phe Gly Met Gln Ala Arg
 50           55           60
Tyr Ser Leu Arg Asp Glu Phe Pro Leu Leu Thr Thr Lys Arg Val Phe
 65           70           75           80
Trp Lys Gly Val Leu Glu Glu Leu Leu Trp Phe Ile Lys Gly Ser Thr
 85           90           95
Asn Ala Lys Glu Leu Ser Ser Lys Gly Val Lys Ile Trp Asp Ala Asn
100          105          110
Gly Ser Arg Asp Phe Leu Asp Ser Leu Gly Phe Ser Thr Arg Glu Glu
115          120          125
Gly Asp Leu Gly Pro Val Tyr Gly Phe Gln Trp Arg His Phe Gly Ala
130          135          140
Glu Tyr Arg Asp Met Glu Ser Asp Tyr Ser Gly Gln Gly Val Asp Gln

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145		150		155		160									
Leu	Gln	Arg	Val	Ile	Asp	Thr	Ile	Lys	Thr	Asn	Pro	Asp	Asp	Arg	Arg
		165							170					175	
Ile	Ile	Met	Cys	Ala	Trp	Asn	Pro	Arg	Asp	Leu	Pro	Leu	Met	Ala	Leu
		180						185				190			
Pro	Pro	Cys	His	Ala	Leu	Cys	Gln	Phe	Tyr	Val	Val	Asn	Ser	Glu	Leu
		195					200					205			
Ser	Cys	Gln	Leu	Tyr	Gln	Arg	Ser	Gly	Asp	Met	Gly	Leu	Gly	Val	Pro
	210				215						220				
Phe	Asn	Ile	Ala	Ser	Tyr	Ala	Leu	Leu	Thr	Tyr	Met	Ile	Ala	His	Ile
225					230					235				240	
Thr	Gly	Leu	Lys	Pro	Gly	Asp	Phe	Ile	His	Thr	Leu	Gly	Asp	Ala	His
			245					250					255		
Ile	Tyr	Leu	Asn	His	Ile	Glu	Pro	Leu	Lys	Ile	Gln	Leu	Gln	Arg	Glu
		260						265				270			
Pro	Arg	Pro	Phe	Pro	Lys	Leu	Arg	Ile	Leu	Arg	Lys	Val	Glu	Lys	Ile
	275				280						285				
Asp	Asp	Phe	Lys	Ala	Glu	Asp	Phe	Gln	Ile	Glu	Gly	Tyr	Asn	Pro	His
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Pro	Thr	Ile	Lys	Met	Glu	Met	Ala	Val							
305				310											

<210> 434  
 <211> 1536  
 <212> DNA  
 <213> Homo sapiens

<400> 434

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<210> 435

<211> 225  
 <212> PRT  
 <213> Homo sapiens

<400> 435  
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 1 5 10 15  
 Tyr Lys Glu Val Thr Thr Leu Thr Ala Asp Pro Pro Asp Gly Ile Lys  
 20 25 30  
 Val Phe Pro Asn Glu Glu Asp Leu Thr Asp Leu Gln Val Thr Ile Glu  
 35 40 45  
 Gly Pro Glu Gly Thr Pro Tyr Ala Gly Gly Leu Phe Arg Met Lys Leu  
 50 55 60  
 Leu Leu Gly Lys Asp Phe Pro Ala Ser Pro Pro Lys Gly Tyr Phe Leu  
 65 70 75 80  
 Thr Lys Ile Phe His Pro Asn Val Gly Ala Asn Gly Glu Ile Cys Val  
 85 90 95  
 Asn Val Leu Lys Arg Asp Trp Thr Ala Glu Leu Gly Ile Arg His Val  
 100 105 110  
 Leu Leu Thr Ile Lys Cys Leu Leu Ile His Pro Asn Pro Glu Ser Ala  
 115 120 125  
 Leu Asn Glu Glu Ala Gly Arg Leu Leu Leu Glu Asn Tyr Glu Glu Tyr  
 130 135 140  
 Ala Ala Arg Ala Arg Leu Leu Thr Glu Ile His Gly Gly Ala Gly Gly  
 145 150 155 160  
 Pro Ser Gly Arg Ala Glu Ala Gly Arg Ala Leu Ala Ser Gly Thr Glu  
 165 170 175  
 Ala Ser Ser Thr Asp Pro Gly Ala Pro Gly Gly Pro Gly Gly Ala Glu  
 180 185 190  
 Gly Pro Met Ala Lys Lys His Ala Gly Glu Arg Asp Lys Lys Leu Ala  
 195 200 205  
 Ala Lys Lys Lys Thr Asp Lys Lys Arg Ala Leu Arg Ala Leu Arg Arg  
 210 215 220  
 Leu  
 225

<210> 436  
 <211> 890  
 <212> DNA  
 <213> Homo sapiens

<400> 436  
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890

<210> 437  
 <211> 197  
 <212> PRT  
 <213> Homo sapiens

<400> 437  
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 Glu Pro Pro Pro Gly Ile Thr Cys Trp Gln Asp Lys Asp Gln Met Asp  
 20 25 30  
 Asp Leu Arg Ala Gln Ile Leu Gly Gly Ala Asn Thr Pro Tyr Glu Lys  
 35 40 45  
 Gly Val Phe Lys Leu Glu Val Ile Ile Pro Glu Arg Tyr Pro Phe Glu  
 50 55 60  
 Pro Pro Gln Ile Arg Phe Leu Thr Pro Ile Tyr His Pro Asn Ile Asp  
 65 70 75 80  
 Ser Ala Gly Arg Ile Cys Leu Asp Val Leu Lys Leu Pro Pro Lys Gly  
 85 90 95  
 Ala Trp Arg Pro Ser Leu Asn Ile Ala Thr Val Leu Thr Ser Ile Gln  
 100 105 110  
 Leu Leu Met Ser Glu Pro Asn Pro Asp Asp Pro Leu Met Ala Asp Ile  
 115 120 125  
 Ser Ser Glu Phe Lys Tyr Asn Lys Pro Ala Phe Leu Lys Asn Ala Arg  
 130 135 140  
 Gln Trp Thr Glu Lys His Ala Arg Gln Lys Gln Lys Ala Asp Glu Glu  
 145 150 155 160  
 Glu Met Leu Asp Asn Leu Pro Glu Ala Gly Asp Ser Arg Val His Asn  
 165 170 175  
 Ser Thr Gln Lys Arg Lys Ala Ser Gln Leu Val Gly Ile Glu Lys Lys  
 180 185 190  
 Phe His Pro Asp Val  
 195

<210> 438  
 <211> 928  
 <212> DNA  
 <213> Homo sapiens

<400> 438  
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aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa

928

<210> 439  
<211> 91  
<212> PRT  
<213> Homo sapiens

<400> 439  
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Leu Val Asp Lys Cys Ile Gly Ser Arg Ile His Ile Val Met Lys Ser  
20 25 30  
Asp Lys Glu Ile Val Gly Thr Leu Leu Gly Phe Asp Asp Phe Val Asn  
35 40 45  
Met Val Leu Glu Asp Val Thr Glu Phe Glu Ile Thr Pro Glu Gly Arg  
50 55 60  
Arg Ile Thr Lys Leu Asp Gln Ile Leu Leu Asn Gly Asn Asn Ile Thr  
65 70 75 80  
Met Leu Val Pro Gly Gly Glu Gly Pro Glu Val  
85 90

<210> 440  
<211> 749  
<212> DNA  
<213> Homo sapiens

<400> 440  
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ctaggatttg atgactttgt caatatggta ctggaagatg tcaactgagtt tgaaatcaca 180  
ccagaaggaa gaaggattac taaattagat cagattttgc taaatggaaa taatataaca 240  
atgctgggttc ctggaggaga aggacctgaa gtgtgaatga gtttccttga cttacactag 300  
attttgtttt ggcttataat gacaagaaaa tgggaattttt tttcccaact tctaattgttt 360  
aatcccata aagctaagtt tcccggttaa ggaagtgct ttgaagatgt gtaccattt 420  
ttgtaagtta atcatgatta tccctggaaa agaagaaaag aacttcttct tttgcagatg 480  
aaaataaagg tgttttttgg taactgtcat tttgtttatt ctactgcagt agccagtgga 540  
acaaagttag tagttatttt gccacttact tttctgtcat tatatgctta tttgttttgg 600  
catttacgtg accattttgat tctcaaacaa aagttgttcc aaacaaaatg atgaactttg 660  
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tggtgttttg taaaaaaaaa aaaaaaaaaa 749

<210> 441  
<211> 642  
<212> PRT  
<213> Homo sapiens

<400> 441  
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Gln Glu Leu Arg Ser Gln Asp Val Asn Lys Gln Gly Leu Tyr Thr Pro  
20 25 30  
Gln Thr Lys Glu Lys Pro Thr Phe Gly Lys Leu Ser Ile Asn Lys Pro  
35 40 45  
Thr Ser Glu Arg Lys Val Ser Leu Phe Gly Lys Arg Thr Ser Gly His  
50 55 60  
Gly Ser Arg Asn Ser Gln Leu Gly Ile Phe Ser Ser Ser Glu Lys Ile

65					70					75					80
Lys	Asp	Pro	Arg	Pro	Leu	Asn	Asp	Lys	Ala	Phe	Ile	Gln	Gln	Cys	Ile
				85					90					95	
Arg	Gln	Leu	Cys	Glu	Phe	Leu	Thr	Glu	Asn	Gly	Tyr	Ala	His	Asn	Val
			100					105					110		
Ser	Met	Lys	Ser	Leu	Gln	Ala	Pro	Ser	Val	Lys	Asp	Phe	Leu	Lys	Ile
		115					120				125				
Phe	Thr	Phe	Leu	Tyr	Gly	Phe	Leu	Cys	Pro	Ser	Tyr	Glu	Leu	Pro	Asp
	130				135						140				
Thr	Lys	Phe	Glu	Glu	Glu	Val	Pro	Arg	Ile	Phe	Lys	Asp	Leu	Gly	Tyr
145					150					155					160
Pro	Phe	Ala	Leu	Ser	Lys	Ser	Ser	Met	Tyr	Thr	Val	Gly	Ala	Pro	His
				165				170						175	
Thr	Trp	Pro	His	Ile	Val	Ala	Ala	Leu	Val	Trp	Leu	Ile	Asp	Cys	Ile
		180						185					190		
Lys	Ile	His	Thr	Ala	Met	Lys	Glu	Ser	Ser	Pro	Leu	Phe	Asp	Asp	Gly
	195						200					205			
Gln	Pro	Trp	Gly	Glu	Glu	Thr	Glu	Asp	Gly	Ile	Met	His	Asn	Lys	Leu
	210					215					220				
Phe	Leu	Asp	Tyr	Thr	Ile	Lys	Cys	Tyr	Glu	Ser	Phe	Met	Ser	Gly	Ala
225					230					235					240
Asp	Ser	Phe	Asp	Glu	Met	Asn	Ala	Glu	Leu	Gln	Ser	Lys	Leu	Lys	Asp
				245				250						255	
Leu	Phe	Asn	Val	Asp	Ala	Phe	Lys	Leu	Glu	Ser	Leu	Glu	Ala	Lys	Asn
		260						265					270		
Arg	Ala	Leu	Asn	Glu	Gln	Ile	Ala	Arg	Leu	Glu	Gln	Glu	Arg	Glu	Lys
	275						280					285			
Glu	Pro	Asn	Arg	Leu	Glu	Ser	Leu	Arg	Lys	Leu	Lys	Ala	Ser	Leu	Gln
	290					295					300				
Gly	Asp	Val	Gln	Lys	Tyr	Gln	Ala	Tyr	Met	Ser	Asn	Leu	Glu	Ser	His
305					310					315					320
Ser	Ala	Ile	Leu	Asp	Gln	Lys	Leu	Asn	Gly	Leu	Asn	Glu	Glu	Ile	Ala
				325					330					335	
Arg	Val	Glu	Leu	Glu	Cys	Glu	Thr	Ile	Lys	Gln	Glu	Asn	Thr	Arg	Leu
		340						345					350		
Gln	Asn	Ile	Asp	Asn	Gln	Lys	Tyr	Ser	Val	Ala	Asp	Ile	Glu	Arg	
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	370					375					380				
Lys	Asp	Leu	Glu	Ala	Glu	Gln	Gln	Lys	Leu	Trp	Asn	Glu	Glu	Leu	Lys
385					390					395					400
Tyr	Ala	Arg	Gly	Lys	Glu	Ala	Ile	Glu	Thr	Gln	Leu	Ala	Glu	Tyr	His
			405					410					415		
Lys	Leu	Ala	Arg	Lys	Leu	Lys	Leu	Ile	Pro	Lys	Gly	Ala	Glu	Asn	Ser
		420						425				430			
Lys	Gly	Tyr	Asp	Phe	Glu	Ile	Lys	Phe	Asn	Pro	Glu	Ala	Gly	Ala	Asn
	435						440					445			
Cys	Leu	Val	Lys	Tyr	Arg	Ala	Gln	Val	Tyr	Val	Pro	Leu	Lys	Glu	Leu
	450					455					460				
Leu	Asn	Glu	Thr	Glu	Glu	Glu	Ile	Asn	Lys	Ala	Leu	Asn	Lys	Lys	Met
465					470					475					480
Gly	Leu	Glu	Asp	Thr	Leu	Glu	Gln	Leu	Asn	Ala	Met	Ile	Thr	Glu	Ser
			485					490					495		
Lys	Arg	Ser	Val	Arg	Thr	Leu	Lys	Glu	Glu	Val	Gln	Lys	Leu	Asp	Asp
		500						505					510		
Leu	Tyr	Gln	Gln	Lys	Ile	Lys	Glu	Ala	Glu	Glu	Glu	Asp	Glu	Lys	Cys
	515						520					525			

Ala	Ser	Glu	Leu	Glu	Ser	Leu	Glu	Lys	His	Lys	His	Leu	Leu	Glu	Ser
530						535					540				
Thr	Val	Asn	Gln	Gly	Leu	Ser	Glu	Ala	Met	Asn	Glu	Leu	Asp	Ala	Val
545					550					555					560
Gln	Arg	Glu	Tyr	Gln	Leu	Val	Val	Gln	Thr	Thr	Thr	Glu	Glu	Arg	Arg
				565					570					575	
Lys	Val	Gly	Asn	Asn	Leu	Gln	Arg	Leu	Leu	Glu	Met	Val	Ala	Thr	His
			580					585					590		
Val	Gly	Ser	Val	Glu	Lys	His	Leu	Glu	Glu	Gln	Ile	Ala	Lys	Val	Asp
	595						600					605			
Arg	Glu	Tyr	Glu	Glu	Cys	Met	Ser	Glu	Asp	Leu	Ser	Glu	Asn	Ile	Lys
610						615					620				
Glu	Ile	Arg	Asp	Lys	Tyr	Glu	Lys	Lys	Ala	Thr	Leu	Ile	Lys	Ser	Ser
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Glu	Glu														

<210> 442  
 <211> 2150  
 <212> DNA  
 <213> Homo sapiens

<400> 442  
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 ttccagcggg tgggtgtcggc cgcctctcca tgcaggaggt aagatcccag gatgtaaata 180  
 aacaaggcct ctataccoct caaaccaaag agaaaccaac ctttggaag ttgagtataa 240  
 acaaacccgac atctgaaaga aaagtctcgc tatttggaag aagaactagt ggacatggat 300  
 cccggaatag tcaacttggg atattttcca gttctgagaa aatcaaggac ccgagaccac 360  
 ttaatgacaa agcattcatt cagcagtgtg ttcgacaact ctgtgagttt cttacagaaa 420  
 atgggttatgc acataatgtg tccatgaaat ctctacaagc tccctctgtt aaagacttcc 480  
 tgaagatctt cacatttctt tatggcttcc tgtgcccctc atacgaactt cctgacacaa 540  
 agtttgaaga agagggtcca agaactctta aagaccttgg gtatcctttt gcactatcca 600  
 aaagctccat gtacacagtg ggggctcctc atacatggcc tcacattgtg gcagccttag 660  
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 atgatgggca gccttgggga gaagaaactg aagatggaat tatgcataat aagttgtttt 780  
 tggactacac cataaatgca tatgagaggt ttatgagtggt tgccgacagc tttgatgaga 840  
 tgaatgcaga gctgcagtc aaactgaagg atttatttaa tgtggatgct ttttaagctgg 900  
 aatcattaga agcaaaaaac agagcattga atgaacagat tgcaagattg gaacaagaaa 960  
 gagaaaaaga accgaatcgt ctagagtcgt tgagaaaact gaaggcttcc ttacaaggag 1020  
 atgttcaaaa gtatcaggca tacatgagca atttggagtc tcattcagcc attcttgacc 1080  
 agaaattaaa tgggtctcaat gaggaattg ctagagtaga actagaatgt gaaacaataa 1140  
 aacaggagaa cactcgacta cagaatatca ttgacaacca gaagtactca gttgcagaca 1200  
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 aagcgattga aacacaatta gcagagtatc acaaattggc tagaaaatta aaacttattc 1380  
 ctaaagggtg tgagaattcc aaagggttat actttgaaat taagtttaat cccgaggctg 1440  
 gtgccaaact ccttgtcaaa tacagggtc aagtttatgt acctottaag gaactcctga 1500  
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 tagaacaatt gaatgcaatg ataacagaaa gcaagagaag tgtgagaact ctgaaagaag 1620  
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 aaaaatgtgc cagtgcgctt ggtccttgg agaaacacaa gcacctgcta gaaagtactg 1740  
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 tagagatggg tgctacacat gttgggtctg tagagaaaca tcttgaggag cagattgcta 1920  
 aagttgatag agaatatgaa gaatgcatgt cagaagatct ctcggaatat attaaagaga 1980

ttagagataa gtatgagaag aaagctactc taattaagtc ttctgaagaa tgaagataaa 2040  
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 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2150

<210> 443  
 <211> 380  
 <212> PRT  
 <213> Homo sapiens

<400> 443  
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 20 25 30  
 Ile Asp Ala Ser Met Ser Ile Tyr Gln Phe Leu Ile Ala Val Arg Gln  
 35 40 45  
 Gly Gly Asp Val Leu Gln Asn Glu Glu Gly Glu Thr Thr Ser His Leu  
 50 55 60  
 Met Gly Met Phe Tyr Arg Thr Ile Arg Met Met Glu Asn Gly Ile Lys  
 65 70 75 80  
 Pro Val Tyr Val Phe Asp Gly Lys Pro Pro Gln Leu Lys Ser Gly Glu  
 85 90 95  
 Leu Ala Lys Arg Ser Glu Arg Arg Ala Glu Ala Glu Lys Gln Leu Gln  
 100 105 110  
 Gln Ala Gln Ala Ala Gly Ala Glu Gln Glu Val Glu Lys Phe Thr Lys  
 115 120 125  
 Arg Leu Val Lys Val Thr Lys Gln His Asn Asp Glu Cys Lys His Leu  
 130 135 140  
 Leu Ser Leu Met Gly Ile Pro Tyr Leu Asp Ala Pro Ser Glu Ala Glu  
 145 150 155 160  
 Ala Ser Cys Ala Ala Leu Val Lys Ala Gly Lys Val Tyr Ala Ala Ala  
 165 170 175  
 Thr Glu Asp Met Asp Cys Leu Thr Phe Gly Ser Pro Val Leu Met Arg  
 180 185 190  
 His Leu Thr Ala Ser Glu Ala Lys Lys Leu Pro Ile Gln Glu Phe His  
 195 200 205  
 Leu Ser Arg Ile Leu Gln Glu Leu Gly Leu Asn Gln Glu Gln Phe Val  
 210 215 220  
 Asp Leu Cys Ile Leu Leu Gly Ser Asp Tyr Cys Glu Ser Ile Arg Gly  
 225 230 235 240  
 Ile Gly Pro Lys Arg Ala Val Asp Leu Ile Gln Lys His Lys Ser Ile  
 245 250 255  
 Glu Glu Ile Val Arg Arg Leu Asp Pro Asn Lys Tyr Pro Val Pro Glu  
 260 265 270  
 Asn Trp Leu His Lys Glu Ala His Gln Leu Phe Leu Glu Pro Glu Val  
 275 280 285  
 Leu Asp Pro Glu Ser Val Glu Leu Lys Trp Ser Glu Pro Asn Glu Glu  
 290 295 300  
 Glu Leu Ile Lys Phe Met Cys Gly Glu Lys Gln Phe Ser Glu Glu Arg  
 305 310 315 320  
 Ile Arg Ser Gly Val Lys Arg Leu Ser Lys Ser Arg Gln Gly Ser Thr  
 325 330 335  
 Gln Gly Arg Leu Asp Asp Phe Phe Lys Val Thr Gly Ser Leu Ser Ser  
 340 345 350  
 Ala Lys Arg Lys Glu Pro Glu Pro Lys Gly Ser Thr Lys Lys Lys Ala  
 355 360 365  
 Lys Thr Gly Ala Ala Gly Lys Phe Lys Arg Gly Lys

370

375

380

<210> 444  
 <211> 2265  
 <212> DNA  
 <213> Homo sapiens

<400> 444  
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 gggactgggt gccatgagag cagccgtctg aggggacgca gcctgcacta cgcgccccaa 180  
 gaggctgtgc gtggcgagca ggtcacgtga cgggagcgcg ggctttggaa ggcggctgaa 240  
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 gcaacccccg accaagcttt agccgcgag gcccgtgtc ccaaaggcca gtcateccctc 360  
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 gccatccggg agaatgacat caagagctac ttggccgta aggtggccat tgatgcctct 480  
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 gaggtgaga ccaccagcca cctgatgggc atgttctacc gcaccattcg catgatggag 600  
 aacggcatca agcccggtga tgtctttgat ggcaagcgc cacagctcaa gtcaggcgag 660  
 ctggccaaac gcagtgagcg gcgggctgag gcagagaagc agctgcagca ggctcaggct 720  
 gctggggccg agcaggaggt ggaaaaattc actaagcggc tggatgaagt cactaagcag 780  
 cacaatgatg agtgcaaaac tctgctgagc ctcatgggca tcccttatct tgatgcaccc 840  
 agtgaggcag aggccagctg tgctgccctg gtgaaggctg gcaaagtcta tgctgcggct 900  
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 ggctgaacc aggaacagtt tgtggatctg tgcatcctgc taggcagtga ctactgtgag 1080  
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 aaggaggctc accagctctt cttggaacct gaggtgctgg acccagagtc tgtggagctg 1260  
 aagtggagcg agccaaatga agaagagctg atcaagttca tgtgtggtga aaagcagttc 1320  
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 cagggcgccc tggatgattt cttcaagggt accggctcac tctcttcagc taagcgcaag 1440  
 gagccagaac ccaagggtat cactaagaag aaggcaaga ctggggcagc aggaagttt 1500  
 aaaaggggaa aataaatgtg tttcccccatt atacctcctt caccocagaa tatttgccgt 1560  
 cttgtacctt taagagctac agctagagaa accttcacgg ggtggagaga ggattctaag 1620  
 gcttttctag cgtgacctt ttcagtagtg ctagtccctt ttttacttga tcttaattggc 1680  
 aagaaggcca cagaggtact tttccttttt tagctcagga aaatatgtca ggctcaaacc 1740  
 acttctcagg cagtttaatt gacactaagt ccattgttac atgaaagtga tagatagcaa 1800  
 caagtttttg agaagagaga gggagataaa agggggagac aaaagatgta cagaaatgat 1860  
 ttcttggtcg gccaaactgg ggccagtggg aggtgatggg ggacctagac tgtgcttttc 1920  
 tgtcttggtc agccttgacc cacttgaga gagagccacc aggaaggcgc atcttagcag 1980  
 atgggaggaa ctgctgagag aagatgggca gaaagctgga gccctggag ttggctgtgt 2040  
 ctgtgtttgt gactgattac tggctgtgtc ttgggtgggc agaaactcga acttgctatg 2100  
 taatttgtgt ctagtatttc agaggagtaa gatggtgatg ttcacctggc aatcagctga 2160  
 gttgagactt tgggaataaga cactggtttt catgcgctgt ttttgtttta aagttatgaa 2220  
 gaaaaaagtc aataaaattc taaaagtaaa aaaaaaaa aaaaa 2265

<210> 445  
 <211> 277  
 <212> PRT  
 <213> Homo sapiens

<400> 445  
 Met Glu Ala Ala Glu Thr Glu Ala Glu Ala Ala Ala Leu Glu Val Leu  
 1 5 10 15  
 Ala Glu Val Ala Gly Ile Leu Glu Pro Val Gly Leu Gln Glu Glu Ala

	20		25		30										
Glu	Leu	Pro	Ala	Lys	Ile	Leu	Val	Glu	Phe	Val	Val	Asp	Ser	Gln	Lys
	35						40					45			
Lys	Asp	Lys	Leu	Leu	Cys	Ser	Gln	Leu	Gln	Val	Ala	Asp	Phe	Leu	Gln
	50					55					60				
Asn	Ile	Leu	Ala	Gln	Glu	Asp	Thr	Ala	Lys	Gly	Leu	Asp	Pro	Leu	Ala
65					70				75					80	
Ser	Glu	Asp	Thr	Ser	Arg	Gln	Lys	Ala	Ile	Ala	Ala	Lys	Glu	Gln	Trp
			85					90						95	
Lys	Glu	Leu	Lys	Ala	Thr	Tyr	Arg	Glu	His	Val	Glu	Ala	Ile	Lys	Ile
			100					105					110		
Gly	Leu	Thr	Lys	Ala	Leu	Thr	Gln	Met	Glu	Glu	Ala	Gln	Arg	Lys	Arg
	115						120					125			
Thr	Gln	Leu	Arg	Glu	Ala	Phe	Glu	Gln	Leu	Gln	Ala	Lys	Lys	Gln	Met
	130				135						140				
Ala	Met	Glu	Lys	Arg	Arg	Ala	Val	Gln	Asn	Gln	Trp	Gln	Leu	Gln	Gln
145					150					155				160	
Glu	Lys	His	Leu	Gln	His	Leu	Ala	Glu	Val	Ser	Ala	Glu	Val	Arg	Glu
			165					170						175	
Arg	Lys	Thr	Gly	Thr	Gln	Gln	Glu	Leu	Asp	Arg	Val	Phe	Gln	Lys	Leu
			180					185					190		
Gly	Asn	Leu	Lys	Gln	Gln	Ala	Glu	Gln	Glu	Arg	Asp	Lys	Leu	Gln	Arg
	195						200					205			
Tyr	Gln	Thr	Phe	Leu	Gln	Leu	Leu	Tyr	Thr	Leu	Gln	Gly	Lys	Leu	Leu
	210					215					220				
Phe	Pro	Glu	Ala	Glu	Ala	Glu	Ala	Glu	Asn	Leu	Pro	Asp	Asp	Lys	Pro
225					230					235				240	
Gln	Gln	Pro	Thr	Arg	Pro	Gln	Glu	Gln	Ser	Thr	Gly	Asp	Thr	Met	Gly
			245					250						255	
Arg	Asp	Pro	Gly	Val	Ser	Phe	Lys	Ala	Val	Gly	Leu	Gln	Pro	Ala	Gly
			260					265					270		
Asp	Val	Asn	Leu	Pro											
	275														

<210> 446  
 <211> 1658  
 <212> DNA  
 <213> Homo sapiens

<400> 446  
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 gaactgccag ccaagatcct ggttgagttt gtggtggact ctcagaagaa agacaagctg 180  
 ctctgcagcc agcttcaggt agcggatttc ctgcagaaca tcctggctca ggaggacact 240  
 gctaagggtc tcgacccctt ggcttctgaa gacacgagcc gacagaaggc aattgcagct 300  
 aaggaacaat ggaaagagct gaaggccacc tacagggagc acgtagaggc catcaaaatt 360  
 ggctcacca aggcctgac tcagatggag gaagccaga ggaaacggac acaactccgg 420  
 gaagcctttg agcagctcca ggccaagaaa caaatggcca tggagaaacg cagagcagtc 480  
 cagaaccagt ggcagctaca acaggagaag catctgcagc atctggcgga ggtttctgca 540  
 gaggtgaggg agcgtaaagc agggactcag caggagcttg acaggggtgt tcagaaactt 600  
 ggaaacctga agcagcaggc agaacaggag cgggacaagc tgcagaggta tcagaccttc 660  
 ctccagcttc tgtataccct gcagggttaag ctgttgttcc ctgaggctga ggctgaggca 720  
 gagaatcttc cagatgataa accccagcag ccgactcgac cccaggagca gactacagga 780  
 gacaccatgg ggagagacc ttggtgtgac ttcaaggctg ttggtctaca acctgctgga 840  
 gatgtaaatt tgccatgact tcctggagga cagcagcatg gagaaagatc ctagaaaagg 900  
 cctctgactt ccctcacctc ccaaccatca ttacaggaaa gactgtgaac tcctgagttc 960

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agcttgattt ctgactacat cccagcaagc tctggcatct gtggattaaa atccctggat 1020
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tactcagaag ccaataacat gacaggagct gggactgggt tgaacacagg gtgtgcagat 1140
ggggaggggg tactggcctt gggcctccta tgatgcagac atgggtgaatt taattcaagg 1200
aggaggagaa tgttttaggc aggtggttat atgtgggaag ataattttat tcatggatcc 1260
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gtgagctcat ctgactgttt taggatgtac agcctagtgt taacattctt ggtatctttt 1380
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ttcaaagatt cagagattgg cttttgtcat ccactattgt atgttttgtt tcattgacct 1500
ctagtatac cttgatcttt cccactttct gttttcggat tggagaagat gtaccttttt 1560
tgtcaactct tactttttatc agatgatcaa ctcaagtatt tggatcttta tttgttttct 1620
caaataaata ttttaaggta aaaaaaaaaa aaaaaaaaaa 1658

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<210> 447  
 <211> 277  
 <212> PRT  
 <213> Homo sapiens

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<400> 447
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Ala Glu Val Ala Gly Ile Leu Glu Pro Val Gly Leu Gln Glu Glu Ala
20        25        30
Glu Leu Pro Ala Lys Ile Leu Val Glu Phe Val Val Asp Ser Gln Lys
35        40        45
Lys Asp Lys Leu Leu Cys Ser Gln Leu Gln Val Ala Asp Phe Leu Gln
50        55        60
Asn Ile Leu Ala Gln Glu Asp Thr Ala Lys Gly Leu Asp Pro Leu Ala
65        70        75        80
Ser Glu Asp Thr Ser Arg Gln Lys Ala Ile Ala Ala Lys Glu Gln Trp
85        90        95
Lys Glu Leu Lys Ala Thr Tyr Arg Glu His Val Glu Ala Ile Lys Ile
100       105       110
Gly Leu Thr Lys Ala Leu Thr Gln Met Glu Glu Ala Gln Arg Lys Arg
115       120       125
Thr Gln Leu Arg Glu Ala Phe Glu Gln Leu Gln Ala Lys Lys Gln Met
130       135       140
Ala Met Glu Lys Arg Arg Ala Val Gln Asn Gln Trp Gln Leu Gln Gln
145       150       155       160
Glu Lys His Leu Gln His Leu Ala Glu Val Ser Ala Glu Val Arg Glu
165       170       175
Arg Lys Thr Gly Thr Gln Gln Glu Leu Asp Arg Val Phe Gln Lys Leu
180       185       190
Gly Asn Leu Lys Gln Gln Ala Glu Gln Glu Arg Asp Lys Leu Gln Arg
195       200       205
Tyr Gln Thr Phe Leu Gln Leu Leu Tyr Thr Leu Gln Gly Lys Leu Leu
210       215       220
Phe Pro Glu Ala Glu Ala Glu Ala Glu Asn Leu Pro Asp Asp Lys Pro
225       230       235       240
Gln Gln Pro Thr Arg Pro Gln Glu Gln Ser Thr Gly Asp Thr Met Gly
245       250       255
Arg Asp Pro Gly Val Ser Phe Lys Ala Val Gly Leu Gln Pro Ala Gly
260       265       270
Asp Val Asn Leu Pro
275

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<210> 448  
 <211> 1851  
 <212> DNA  
 <213> Homo sapiens

<400> 448  
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 ctagaggtcc tggctgaggt ggcaggcatc ttggaacctg taggcctgca ggaggaggca 120  
 gaactgccag ccaagatcct ggttgagttt gtggtggact ctcagaagaa agacaagctg 180  
 ctctgcagcc agcttcaggt agcggatttc ctgcagaaca tcctggctca ggaggacact 240  
 gctaagggtc tcgacccctt ggcttctgaa gacacgagcc gacagaaggc aattgcagct 300  
 aaggaacaat ggaaagagct gaaggccacc tacagggagc acgtagaggc catcaaaatt 360  
 ggcctcacca aggccctgac tcagatggag gaagcccaga ggaaacggac acaactccgg 420  
 gaagcctttg agcagctcca ggccaagaaa caaatggcca tggagaaacg cagagcagtc 480  
 cagaaccagt ggcagctaca acaggagaag catctgcagc atctggcgga ggtttctgca 540  
 gaggtgaggg agcgtaaagc agggactcag caggagcttg acaggggtgt tcagaaactt 600  
 ggaaacctga agcagcaggc agaacaggag cgggacaagc tgcagaggta tcagaccttc 660  
 ctccagcttc tgtataccct gcagggttaag ctgttgttcc ctgaggctga ggctgaggca 720  
 gagaatcttc cagatgataa accccagcag ccgactcgac cccaggagca gactacagga 780  
 gacaccatgg ggagagaccc tgggtgtgtcc ttcaaggctg ttggtctaca acctgctgga 840  
 gatgtaaatt tgccatgact tcctggagga cagcagcatg gagaaagatc ctagaaaagg 900  
 tcagacccaa ctcaggcctt ggtgtccctg gactgcaagt gtggaaggag ggaaagcctg 960  
 gtttacctct ctctgcatct gagctctgct acccatggag cagatggatg gtgggaacag 1020  
 gaaagagctt atgttacacc tcattcccat gcttagccca cccagagcta acccctgtct 1080  
 tcttccccag gcctctgact tcctcaccct cccaaccatc attacaggaa agactgtgaa 1140  
 ctcttgagtt cagcttgatt tctgactaca tcccagcaag ctctggcatc tgtggattaa 1200  
 aatccctgga tctctctcag ttgtgtatatt gtcatcttc atatgctggc aggaacaact 1260  
 attaatacag atactcagaa gccataaaca tgacaggagc tgggactggt ttgaacacag 1320  
 ggtgtgcaga tggggagggg gtactggcct tgggcctcct atgatgcaga catggtgaat 1380  
 ttaattcaag gaggaggaga atgttttagg cagggtggtta tatgtgggaa gataatttta 1440  
 ttcatggatc caaatgtttg ttgagtcctt ttgtgctaag gttcttgagg tgaaccagaa 1500  
 ttataacagt gagctcatct gactgtttta ggatgtacag cctagtgtta acattcttgg 1560  
 tatctttttg tgccttatct aaaacatttc tcatcactg gtttcagatg ttcattttatt 1620  
 atattctttt caaagattca gagattggct ttgtcatcc actattgtat gttttgtttc 1680  
 attgacctct agtgatacct tgatctttcc cactttctgt ttcggattg gagaagatgt 1740  
 accttttttg tcaactotta cttttatcag atgatcaact cacgtatttg gatctttatt 1800  
 tgttttctca aataaatatt taaggttaaa aaaaaaaaaa aaaaaaaaaa a 1851

<210> 449  
 <211> 211  
 <212> PRT  
 <213> Homo sapiens

<400> 449  
 Met Ala Ala Arg Arg Gly Ala Leu Ile Val Leu Glu Gly Val Asp Arg  
 1 5 10 15  
 Ala Gly Lys Ser Thr Gln Ser Arg Lys Leu Val Glu Ala Leu Ser Arg  
 20 25 30  
 Gly Pro Pro Pro Glu Leu Leu Arg Phe Pro Glu Arg Ser Thr Glu Ile  
 35 40 45  
 Gly Lys Leu Leu Ser Ser Tyr Leu Gln Lys Lys Ser Asp Val Glu Asp  
 50 55 60  
 His Ser Val His Leu Leu Phe Ser Ala Asn Arg Trp Glu Gln Val Pro  
 65 70 75 80  
 Leu Ile Lys Glu Lys Leu Ser Gln Gly Val Thr Leu Val Val Asp Arg  
 85 90 95  
 Tyr Ala Phe Ser Gly Val Ala Phe Thr Gly Ala Lys Glu Asn Phe Ser



	100		105		110
Leu Asp Trp	Cys Lys Gln Pro Asp Val Gly Leu Pro Lys Pro Asp Leu				
115		120		125	
Val Leu Phe	Leu Gln Leu Gln Leu Ala Asp Ala Ala Lys Arg Gly Ala				
130		135		140	
Phe Gly His	Glu Arg Tyr Glu Asn Gly Ala Phe Gln Glu Arg Ala Leu				
145		150		155	160
Arg Cys Phe	His Gln Leu Met Lys Asp Thr Thr Leu Asn Trp Lys Met				
	165		170		175
Val Asp Ala	Ser Lys Arg Leu Glu Ala Val His Glu Glu Leu Arg Val				
	180		185		190
Leu Ser Glu	Asp Ala Ile Arg Thr Ala Thr Glu Lys Pro Leu Gly Glu				
195		200		205	
Leu Trp Lys					
210					

<210> 450  
 <211> 1000  
 <212> DNA  
 <213> Homo sapiens

<400> 450  
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 gagggcggtg accgcgcggg gaagagcacg cagagccgca agctgggtgga agcgtgtctg 120  
 cggggccac cggccgaact gctccggttc cggaaagat caactgaaat cggcaaactt 180  
 ctgagttcct acttgcaaaa gaaaagtgac gtggaggatc actcgggtgca cctgcttttt 240  
 tctgcaaatc gctgggaaca agtgccgtta attaaggaaa agttgagcca gggcgtgacc 300  
 ctcgctgtgg acagatacgc attttctggt gtggccttca ccggtgccaa ggagaatttt 360  
 tccctagact ggtgtaaaca gccagacgtg ggccttccca aaccgcacct ggtcctgttc 420  
 ctccagttac agctggcgga tgctgccaaag cggggagcgt ttggccatga gcgctatgag 480  
 aacggggctt tccaggagcg ggcgctccgg tgtttccacc agctcatgaa agacacgact 540  
 ttgaactgga agatgggtgga tgcttccaaa agactcgaag ctgtccatga ggaactccgc 600  
 gtgctctctg aggacgccat ccgcaactgcc acagagaagc cgctggggga gctatggaag 660  
 tgaccaaggg ctgcccactg gagacgcctc tccctgcagt ccccgagag gtgggagact 720  
 cgggaaggc cccgtcccca gcgagtcga gacccacaa cttcaggagc tctttcccg 780  
 cagcagagat ctgcaggctg cctcttctgc cccggagctg ggggtgactg gggacccccg 840  
 tgggtggggac attggcagtg tggacatgag cagagcgatg gagcagtcctc ctgcccctctc 900  
 cctgtctctg atggcactct gttgtatttt cttactgaag ttcagtgaata actctgagca 960  
 gtttcattgt gatcactgta aatggtaatc agttggaatt 1000

<210> 451  
 <211> 282  
 <212> PRT  
 <213> Homo sapiens

<400> 451	
Met Pro Leu Leu Thr Gln Gln Ile Gln Asp Glu Asp Asp Gln Tyr Ser	
1	5 10 15
Leu Val Ala Ser Leu Asp Asn Val Arg Asn Leu Ser Thr Ile Leu Lys	
20	25 30
Ala Ile His Phe Arg Glu His Ala Thr Cys Phe Ala Thr Lys Asn Gly	
35	40 45
Ile Lys Val Thr Val Glu Asn Ala Lys Cys Val Gln Ala Asn Ala Phe	
50	55 60
Ile Gln Ala Gly Ile Phe Gln Glu Phe Lys Val Gln Glu Glu Ser Val	
65	70 75 80

Thr	Phe	Arg	Ile	Asn	Leu	Thr	Val	Leu	Leu	Asp	Cys	Leu	Ser	Ile	Phe	
				85				90						95		
Gly	Ser	Ser	Pro	Met	Pro	Gly	Thr	Leu	Thr	Ala	Leu	Arg	Met	Cys	Tyr	
			100					105					110			
Gln	Gly	Tyr	Gly	Tyr	Pro	Leu	Met	Leu	Phe	Leu	Glu	Glu	Gly	Gly	Val	
		115					120					125				
Val	Thr	Val	Cys	Lys	Ile	Asn	Thr	Gln	Glu	Pro	Glu	Glu	Thr	Leu	Asp	
	130					135					140					
Phe	Asp	Phe	Cys	Ser	Thr	Asn	Val	Ile	Asn	Lys	Ile	Ile	Leu	Gln	Ser	
145					150					155				160		
Glu	Gly	Leu	Arg	Glu	Ala	Phe	Ser	Glu	Leu	Asp	Met	Thr	Ser	Glu	Val	
			165					170						175		
Leu	Gln	Ile	Thr	Met	Ser	Pro	Asp	Lys	Pro	Tyr	Phe	Arg	Leu	Ser	Thr	
		180					185						190			
Phe	Gly	Asn	Ala	Gly	Ser	Ser	His	Leu	Asp	Tyr	Pro	Lys	Asp	Ser	Asp	
	195					200						205				
Leu	Met	Glu	Ala	Phe	His	Cys	Asn	Gln	Thr	Gln	Val	Asn	Arg	Tyr	Lys	
	210					215					220					
Ile	Ser	Leu	Leu	Lys	Pro	Ser	Thr	Lys	Ala	Leu	Val	Leu	Ser	Cys	Lys	
225					230					235					240	
Val	Ser	Ile	Arg	Thr	Asp	Asn	Arg	Gly	Phe	Leu	Ser	Leu	Gln	Tyr	Met	
			245					250						255		
Ile	Arg	Asn	Glu	Asp	Gly	Gln	Ile	Cys	Phe	Val	Glu	Tyr	Tyr	Cys	Cys	
		260					265						270			
Pro	Asp	Glu	Glu	Val	Pro	Glu	Ser	Glu	Ser							
	275					280										

<210> 452  
 <211> 1776  
 <212> DNA  
 <213> Homo sapiens

<400> 452  
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 ctccctccgg tctcggtggc ggcgcacgcg cggctctcta ggctccttc agctctgtgg 120  
 tgacggtggc cgaggtggag ggcggtctg aagagtggcg ggactggctt cacttccctc 180  
 gcggttccctc ggagcgcct cgctcctctt cagggacttt gctgagaagg gctctcgggc 240  
 gtccagaccc caccgcaaag gtgtttggcg atccgcgcgag aagttgttgg cccaggagc 300  
 atccctcggg gccgaatgcg cagtggacga tgcctctctt gacccaacag atccaagacg 360  
 aggatgatca gtacagcctt gtggccagcc ttgacaacgt taggaatctc tccactatct 420  
 tgaaagctat tcatttccga gaacatgcc aagtgttctg aactaaaaat ggtatcaaag 480  
 taacagtggg aaatgcaaag tgtgtgcaag caaatgcttt tattcaggct ggaatatttc 540  
 aggagtttaa agttcaggaa gactctgtta cttttcgaat taatttaact gtcccttttag 600  
 actgtttatc ttttttggg tcaagtccta tgccagggac tttaactgca cttcgaatgt 660  
 gttaccaagg ttatggttac cttttgatgc tgttccctgga agaaggagga gtggtgacag 720  
 tctgcaaaat caatacacag gaacctgagg agacctgga ctttgatttc tgcagacca 780  
 atgttattaa taaaattatt ctgcagtcag aggggctccg tgaagcattt tctgaattgg 840  
 atatgacgag tgaagtcta caaattacca tgtctcctga caagccttat ttcaggttat 900  
 ctacttttgg aaatgcagga agttcccacc ttgactatcc caaagattct gatttgatgg 960  
 aagcatttca ttgtaatcag acccaagtca acagatacaa gatttcctta ctgaaaccct 1020  
 ctacaaaggc attagtcta tcttgtaagg tatctattcg gacagataac agaggcttcc 1080  
 tttcattaca gatatgatt agaaatgaag atggacaaat atgttttgtg gaatattact 1140  
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 atgtgtacat ttatgataga tgaagttctt attctgagta cagtactctt tgtcatttca 1260  
 tattggattt tctatagaga agaagcaca tggggaagat aggagcaagg tcatgtaccc 1320  
 taatagttac tatgttttgt aaatccattt tgtagagggc atgtaaataa atgttttcct 1380

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gtagtcatag attattcagg actgtccttt agttctgtct tttgaactca tgggaataat 1440
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agcacttttg gaaccccgagg tgggcggatc acctgaggtc aggagttcga aaccagcctg 1560
accaacgtgg agaaacccca tctctactaa aaatacaaaa aattagccgg acgtggtggc 1620
acatgcctgt aatgccagct actcgggagg ctgaggcagg aaaattgctt gaacccggga 1680
ggcggaggtt gtggtgagct gaaatgacgc cattgcactc cagcctaggc aataagagca 1740
aaactctgcc tcaaaaaaaaa aaaaaaaaaa aaaaaa 1776

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<210> 453

<211> 838

<212> PRT

<213> Homo sapiens

<400> 453

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Met Ser Leu Gln Val Leu Asn Asp Lys Asn Val Ser Asn Glu Lys Asn
1      5      10      15
Thr Glu Asn Cys Asp Phe Leu Phe Ser Pro Pro Glu Val Thr Gly Arg
20     25     30
Ser Ser Val Leu Arg Val Ser Gln Lys Glu Asn Val Pro Pro Lys Asn
35     40     45
Leu Ala Lys Ala Met Lys Val Thr Phe Gln Thr Pro Leu Arg Asp Pro
50     55     60
Gln Thr His Arg Ile Leu Ser Pro Ser Met Ala Ser Lys Leu Glu Ala
65     70     75     80
Pro Phe Thr Gln Asp Asp Thr Leu Gly Leu Glu Asn Ser His Pro Val
85     90     95
Trp Thr Gln Lys Glu Asn Gln Gln Leu Ile Lys Glu Val Asp Ala Lys
100    105    110
Thr Thr His Gly Ile Leu Gln Lys Pro Val Glu Ala Asp Thr Asp Leu
115    120    125
Leu Gly Asp Ala Ser Pro Ala Phe Gly Ser Gly Ser Ser Ser Glu Ser
130    135    140
Gly Pro Gly Ala Leu Ala Asp Leu Asp Cys Ser Ser Ser Ser Gln Ser
145    150    155    160
Pro Gly Ser Ser Glu Asn Gln Met Val Ser Pro Gly Lys Val Ser Gly
165    170    175
Ser Pro Glu Gln Ala Val Glu Glu Asn Leu Ser Ser Tyr Ser Leu Asp
180    185    190
Arg Arg Val Thr Pro Ala Ser Glu Thr Leu Glu Asp Pro Cys Arg Thr
195    200    205
Glu Ser Gln His Lys Ala Glu Thr Pro His Gly Ala Glu Glu Glu Cys
210    215    220
Lys Ala Glu Thr Pro His Gly Ala Glu Glu Glu Cys Arg His Gly Gly
225    230    235    240
Val Cys Ala Pro Ala Ala Val Ala Thr Ser Pro Pro Gly Ala Ile Pro
245    250    255
Lys Glu Ala Cys Gly Gly Ala Pro Leu Gln Gly Leu Pro Gly Glu Ala
260    265    270
Leu Gly Cys Pro Ala Gly Val Gly Thr Pro Val Pro Ala Asp Gly Thr
275    280    285
Gln Thr Leu Thr Cys Ala His Thr Ser Ala Pro Glu Ser Thr Ala Pro
290    295    300
Thr Asn His Leu Val Ala Gly Arg Ala Met Thr Leu Ser Pro Gln Glu
305    310    315    320
Glu Val Ala Ala Gly Gln Met Ala Ser Ser Ser Arg Ser Gly Pro Val
325    330    335
Lys Leu Glu Phe Asp Val Ser Asp Gly Ala Thr Ser Lys Arg Ala Pro

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Arg Lys Glu Gln Met Arg Ile Gln Ser Leu Glu Lys Thr Val Glu Gln  
805 810 815  
Lys Thr Lys Glu Asn Glu Glu Leu Thr Arg Ile Cys Asp Asp Leu Ile  
820 825 830  
Ser Lys Met Glu Lys Ile  
835

<210> 454  
<211> 2788  
<212> DNA  
<213> Homo sapiens

<400> 454  
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ggcggcggtcg gcgcgggctc agagcccggc aacgggcggg cgggcagaat gagtctgcag 120  
gtcttaaacg acaaaaatgt cagcaatgaa aaaaatacag aaaattgcga cttcctgttt 180  
tcgccaccag aagttaccgg aagatcgtct gttcttcgtg tgtcacagaa agaaaatgtg 240  
ccaccaaga acctggccaa agctatgaag gtgacttttc agacacctct gcgggatcca 300  
cagacgcaca ggattctaag tcctagcatg gccagcaaac ttgaggctcc tttcactcag 360  
gatgacaccc ttggactgga aaactcacac ccggtctgga cacagaaaga gaaccaacag 420  
ctcatcaagg aagtggatgc caaaactact catggaattc tacagaaacc agtggaggct 480  
gacaccgacc tcctggggga tgcaagccca gcctttggga gtggcagctc cagcagctct 540  
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ggccaaatgg ccagctcctc gaggagcggg cctgtaaaac tagaatttga tgtatctgat 1140  
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cctcccttga ggaaagcagc agtgaggcag caaaaggccc cgcaggagggt ggaggaggac 1260  
gacggtagga gcggagcagg agaggacccc cccatgccag cttctcgggg ctcttaccac 1320  
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ggttgacgtg aggcccagcc ccagaaaagc cctgagacca ggctgggcca gccagcggct 1440  
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cattcagcct cagcggagga cacgcctgtg gtgcagttgg cagccgagac cccaacagca 1560  
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caagccctga aggcccacgc ggaggagaag ctgcagctgg caaacgagga gatcgcccag 2460  
gtccggagca aggcccaggc ggaagcgttg gccctccagg ccagcctgag gaaggagcag 2520  
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accaggatct ggcagacact catctccaag atggagaaga tctgacctcc acggagccgc 2640  
 tgtcccccgc cccctgctcc cgtctgtctg tctgtctga ttctottagg tgtcatgttc 2700  
 ttttttctgt cttgtcttca acttttttta aaactagatt gctttgaaaa catgactcaa 2760  
 taaaagtttc ctttcaattt aaaaaaaaaa 2788

<210> 455  
 <211> 720  
 <212> PRT  
 <213> Homo sapiens

<400> 455  
 Met Asp Asp Pro Lys Lys Glu Asp Ile Leu Leu Leu Ala Asp Glu Lys  
 1 5 10 15  
 Phe Asp Phe Asp Leu Ser Leu Ser Ser Ser Ser Ala Asn Glu Asp Asp  
 20 25 30  
 Glu Val Phe Phe Gly Pro Phe Gly His Lys Glu Arg Cys Ile Ala Ala  
 35 40 45  
 Ser Leu Glu Leu Asn Asn Pro Val Pro Glu Gln Pro Pro Leu Pro Thr  
 50 55 60  
 Ser Glu Ser Pro Phe Ala Trp Ser Pro Leu Ala Gly Glu Lys Phe Val  
 65 70 75 80  
 Glu Val Tyr Lys Glu Ala His Leu Leu Ala Leu His Ile Glu Ser Ser  
 85 90 95  
 Ser Arg Asn Gln Ala Ala Gln Ala Ala Lys Pro Glu Asp Pro Arg Ser  
 100 105 110  
 Gln Gly Val Glu Arg Phe Ile Gln Glu Ser Lys Leu Lys Ile Asn Leu  
 115 120 125  
 Phe Glu Lys Glu Lys Glu Met Lys Lys Ser Pro Thr Ser Leu Lys Arg  
 130 135 140  
 Glu Thr Tyr Tyr Leu Ser Asp Ser Pro Leu Leu Gly Pro Pro Val Gly  
 145 150 155 160  
 Glu Pro Arg Leu Leu Ala Ser Ser Pro Ala Leu Pro Ser Ser Gly Ala  
 165 170 175  
 Gln Ala Arg Leu Thr Arg Ala Pro Gly Pro Pro His Ser Ala His Ala  
 180 185 190  
 Leu Pro Arg Glu Ser Cys Thr Ala His Ala Ala Ser Gln Ala Ala Thr  
 195 200 205  
 Gln Arg Lys Pro Gly Thr Lys Leu Leu Leu Pro Arg Ala Ala Ser Val  
 210 215 220  
 Arg Gly Arg Ser Ile Pro Gly Ala Ala Glu Lys Pro Lys Lys Glu Ile  
 225 230 235 240  
 Pro Ala Ser Pro Ser Arg Thr Lys Ile Pro Ala Glu Lys Glu Ser His  
 245 250 255  
 Arg Asp Val Leu Pro Asp Lys Pro Ala Pro Gly Ala Val Asn Val Pro  
 260 265 270  
 Ala Ala Gly Ser His Leu Gly Gln Gly Lys Arg Ala Ile Pro Val Pro  
 275 280 285  
 Asn Lys Leu Gly Leu Lys Lys Thr Leu Leu Lys Ala Pro Gly Ser Thr  
 290 295 300  
 Ser Asn Leu Ala Arg Lys Ser Ser Ser Gly Pro Val Trp Ser Gly Ala  
 305 310 315 320  
 Ser Ser Ala Cys Thr Ser Pro Ala Val Gly Lys Ala Lys Ser Ser Glu  
 325 330 335  
 Phe Ala Ser Ile Pro Ala Asn Ser Ser Arg Pro Leu Ser Asn Ile Ser  
 340 345 350  
 Lys Ser Gly Arg Met Gly Pro Ala Met Leu Arg Pro Ala Leu Pro Ala  
 355 360 365



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cccaagctgc caagcctgaa gacctcgga gccagggcgt ggaaagattc atacaggagt 420
caaaattaaa aataaacctc tttgagaaag aaaaggaaat gaagaaaagc cccacgtctc 480
ttaaaggga gacatactac ctgtcagaca gccccttgct ggggccccct gtgggtgagc 540
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<210> 457  
 <211> 389  
 <212> PRT  
 <213> Homo sapiens

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 Thr Pro Pro Ala Leu Ser Gly Thr Arg Val Leu Ala Ser Lys Thr Ala  
 35 40 45



Arg Arg Ile Phe Gln Glu Pro Thr Glu Pro Lys Thr Lys Ala Ala Ala  
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 Pro Gly Val Glu Asp Glu Pro Leu Leu Arg Glu Asn Pro Arg Arg Phe  
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 Val Ile Phe Pro Ile Glu Tyr His Asp Ile Trp Gln Met Tyr Lys Lys  
 85 90 95  
 Ala Glu Ala Ser Phe Trp Thr Ala Glu Glu Val Asp Leu Ser Lys Asp  
 100 105 110  
 Ile Gln His Trp Glu Ser Leu Lys Pro Glu Glu Arg Tyr Phe Ile Ser  
 115 120 125  
 His Val Leu Ala Phe Phe Ala Ala Ser Asp Gly Ile Val Asn Glu Asn  
 130 135 140  
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 145 150 155 160  
 Phe Tyr Gly Phe Gln Ile Ala Met Glu Asn Ile His Ser Glu Met Tyr  
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 Ser Leu Leu Ile Asp Thr Tyr Ile Lys Asp Pro Lys Glu Arg Glu Phe  
 180 185 190  
 Leu Phe Asn Ala Ile Glu Thr Met Pro Cys Val Lys Lys Ala Asp  
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 Trp Ala Leu Arg Trp Ile Gly Asp Lys Glu Ala Thr Tyr Gly Glu Arg  
 210 215 220  
 Val Val Ala Phe Ala Ala Val Glu Gly Ile Phe Phe Ser Gly Ser Phe  
 225 230 235 240  
 Ala Ser Ile Phe Trp Leu Lys Lys Arg Gly Leu Met Pro Gly Leu Thr  
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 Ala Cys Leu Met Phe Lys His Leu Val His Lys Pro Ser Glu Glu Arg  
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 Thr Glu Ala Leu Pro Val Lys Leu Ile Gly Met Asn Cys Thr Leu Met  
 305 310 315 320  
 Lys Gln Tyr Ile Glu Phe Val Ala Asp Arg Leu Met Leu Glu Leu Gly  
 325 330 335  
 Phe Ser Lys Val Phe Arg Val Glu Asn Pro Phe Asp Phe Met Glu Asn  
 340 345 350  
 Ile Ser Leu Glu Gly Lys Thr Asn Phe Phe Glu Lys Arg Val Gly Glu  
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 Tyr Gln Arg Met Gly Val Met Ser Ser Pro Thr Glu Asn Ser Phe Thr  
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 <211> 2500  
 <212> DNA  
 <213> Homo sapiens

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<210> 459  
 <211> 890  
 <212> PRT  
 <213> Homo sapiens

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Ser Val Val Arg Lys Asn Leu Leu Ser Asp Cys Ser Val Val Ser Thr
 35           40           45
Ser Leu Glu Asp Lys Gln Gln Val Pro Ser Glu Asp Ser Met Glu Lys
 50           55           60
Val Lys Val Tyr Leu Arg Val Arg Pro Leu Leu Pro Ser Glu Leu Glu
 65           70           75           80
Arg Gln Glu Asp Gln Gly Cys Val Arg Ile Glu Asn Val Glu Thr Leu
 85           90           95
Val Leu Gln Ala Pro Lys Asp Ser Phe Ala Leu Lys Ser Asn Glu Arg

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Ser	Gln	Gln	Arg	Lys	Arg	Gln	Thr	Leu	Arg	Leu	Cys	Glu	Asp	Gln	Asn
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Gly	Asn	Pro	Tyr	Val	Lys	Asp	Leu	Asn	Trp	Ile	His	Val	Gln	Asp	Ala
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Glu	Glu	Ala	Trp	Lys	Leu	Leu	Lys	Val	Gly	Arg	Lys	Asn	Gln	Ser	Phe
		355					360					365			
Ala	Ser	Thr	His	Leu	Asn	Gln	Asn	Ser	Ser	Arg	Ser	His	Ser	Ile	Phe
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Asp	Gln	Lys	Ser	Gly	Glu	Arg	Leu	Lys	Glu	Ala	Gly	Asn	Ile	Asn	Thr
			420					425					430		
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		435					440					445			
Gln	Asn	Arg	Ser	Lys	Gln	Asn	Leu	Val	Pro	Phe	Arg	Asp	Ser	Lys	Leu
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Ile	Val	Asn	Val	Asn	Pro	Cys	Ala	Ser	Thr	Tyr	Asp	Glu	Thr	Leu	His
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Leu	Gln	Val	Ser	Pro	Ser	Leu	Glu	Lys	Gly	Ala	Lys	Ala	Asp	Thr	Gly
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Leu	Asp	Asp	Asp	Ile	Glu	Asn	Glu	Ala	Asp	Ile	Ser	Met	Tyr	Gly	Lys
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 580 585 590  
 Cys Asn Glu Met Val Glu Gln Met Gln Gln Arg Glu Gln Trp Cys Ser  
 595 600 605  
 Glu His Leu Asp Thr Gln Lys Glu Leu Leu Glu Glu Met Tyr Glu Glu  
 610 615 620  
 Lys Leu Asn Ile Leu Lys Glu Ser Leu Thr Ser Phe Tyr Gln Glu Glu  
 625 630 635 640  
 Ile Gln Glu Arg Asp Glu Lys Ile Glu Glu Leu Glu Ala Leu Leu Gln  
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 675 680 685  
 Leu Gln Glu Val Lys Ala Lys Leu Gln Gln Cys Lys Ala Glu Leu Asn  
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 Ser Thr Thr Glu Glu Leu His Lys Tyr Gln Lys Met Leu Glu Pro Pro  
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 Pro Ser Ala Lys Pro Phe Thr Ile Asp Val Asp Lys Lys Leu Glu Glu  
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 Gly Gln Lys Asn Ile Arg Leu Leu Arg Thr Glu Leu Gln Lys Leu Gly  
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 Glu Ser Leu Gln Ser Ala Glu Arg Ala Cys Cys His Ser Thr Gly Ala  
 755 760 765  
 Gly Lys Leu Arg Gln Ala Leu Thr Thr Cys Asp Asp Ile Leu Ile Lys  
 770 775 780  
 Gln Asp Gln Thr Leu Ala Glu Leu Gln Asn Asn Met Val Leu Val Lys  
 785 790 795 800  
 Leu Asp Leu Arg Lys Lys Ala Ala Cys Ile Ala Glu Gln Tyr His Thr  
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 Asn Gln Glu Asn Gln Gln Pro Asn Gln Gln Pro Pro Gly Lys Lys Pro  
 835 840 845  
 Phe Leu Arg Asn Leu Leu Pro Arg Thr Pro Thr Cys Gln Ser Ser Thr  
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 <211> 2972  
 <212> DNA  
 <213> Homo sapiens

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<210> 461
<211> 719
<212> PRT
<213> Homo sapiens

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      20             25             30
Tyr Gly Asn Gln Leu Val Arg Leu Ala His Arg Glu Gln Val Ala Leu
      35             40             45
Tyr Val Asp Leu Asp Asp Val Ala Glu Asp Asp Pro Glu Leu Val Asp

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Ser Ile Cys Glu Asn	Ala Arg Arg Tyr Ala Lys	Leu Phe Ala Asp Ala
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Val Gln Glu Leu Leu	Pro Gln Tyr Lys Glu Arg	Glu Val Val Asn Lys
85	90	95
Asp Val Leu Asp Val	Tyr Ile Glu His Arg	Leu Met Met Glu Gln Arg
100	105	110
Ser Arg Asp Pro Gly	Met Val Arg Ser Pro	Gln Asn Gln Tyr Pro Ala
115	120	125
Glu Leu Met Arg Arg	Phe Glu Leu Tyr Phe	Gln Gly Pro Ser Ser Asn
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Val Thr Val Arg Gly	Ile Val Thr Arg Val	Ser Glu Val Lys Pro Lys
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Gln Pro Ile Gln Ser	Pro Thr Phe Met Pro	Leu Ile Met Cys Pro Ser
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275	280	285
Val Gln Gly Leu Leu	Ser Glu Thr Tyr Leu	Glu Ala His Arg Ile Val
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Arg Glu Glu Leu Arg	Gln Ile Ala Glu Glu	Asp Phe Tyr Glu Lys Leu
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Ala Leu Val Leu Ala	Asp Gln Gly Val Cys	Cys Ile Asp Glu Phe Asp
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 <213> Homo sapiens

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 Ser Pro Ser Lys Lys Arg Cys Ser Asp Asn Thr Glu Val Glu Val Ser  
 65 70 75 80  
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 100 105 110  
 Ile Ser Asp Ser Val Ala Val Pro Ala Ser Leu Leu Gly Met Arg Arg  
 115 120 125  
 Gly Leu Asn Ser Arg Leu Glu Ala Thr Ala Ala Ser Ser Val Lys Thr  
 130 135 140  
 Arg Met Gln Lys Leu Ala Glu Gln Arg Arg Arg Trp Asp Asn Asp Asp  
 145 150 155 160  
 Met Thr Asp Asp Ile Pro Glu Ser Ser Leu Phe Ser Pro Met Pro Ser  
 165 170 175  
 Glu Glu Lys Ala Ala Ser Pro Pro Arg Pro Leu Leu Ser Asn Ala Ser  
 180 185 190  
 Ala Thr Pro Val Gly Arg Arg Gly Arg Leu Ala Asn Leu Ala Ala Thr





Glu	Ser	Gly	Asp	Ser	Leu	Gly	Ser	Glu	Asp	Arg	Asp	Leu	Leu	Tyr	Ser	660	665	670
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Ile	Lys	Gln	Val	Ile	Val	Arg	Lys	Glu	Asp	Val	Thr	Ser	Lys	Leu	Asp	690	695	700
Glu	Lys	Asn	Asn	Ala	Phe	Pro	Cys	Gln	Val	Asn	Ile	Lys	Gln	Lys	Met	705	710	715
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Gln	Ile	Glu	Pro	Ala	Asn	Arg	Glu	Phe	Cys	Ala	Arg	Arg	Asn	Thr	Phe	1020	1025	1030
Glu	Leu	Ile	Thr	Val	Arg	Pro	Gln	Arg	Glu	Asp	Asp	Arg	Glu	Thr	Leu	1035	1040	1045
Val	Ser	Gln	Cys	Arg	Asp	Thr	Leu	Cys	Val	Thr	Lys	Asn	Trp	Leu	Ser	1050	1055	1060
Ala	Asp	Thr	Lys	Glu	Glu	Arg	Asp	Leu	Trp	Met	Gln	Lys	Leu	Asn	Gln	1065	1070	1075
Val	Leu	Val	Asp	Ile	Arg	Leu	Trp	Gln	Pro	Asp	Ala	Cys	Tyr	Lys	Pro	1080	1085	1090

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1110

1115

1120

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<212> DNA  
<213> Homo sapiens

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      35             40             45
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      50             55             60
Asn Ser Ile Ile Met Leu Glu Ala Leu Glu Arg Val
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cagctctcat tccagttttt tctaacatga attttctctg ttgacattga tttcaaaggg 540
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aaaaaa                                           606

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<400> 467
Met Glu Leu Ser Asp Ala Asn Leu Gln Thr Leu Thr Glu Tyr Leu Lys
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Lys Thr Leu Asp Pro Asp Pro Ala Ile Arg Arg Pro Ala Glu Lys Phe
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Leu Glu Ser Val Glu Gly Asn Gln Asn Tyr Pro Leu Leu Leu Leu Thr
        35                    40                    45
Leu Leu Glu Lys Ser Gln Asp Asn Val Ile Lys Val Cys Ala Ser Val
        50                    55                    60
Thr Phe Lys Asn Tyr Ile Lys Arg Asn Trp Arg Ile Val Glu Asp Glu
65                    70                    75                    80
Pro Asn Lys Ile Cys Glu Ala Asp Arg Val Ala Ile Lys Ala Asn Ile
        85                    90                    95
Val His Leu Met Leu Ser Ser Pro Glu Gln Ile Gln Lys Gln Leu Ser
        100                    105                    110
Asp Ala Ile Ser Ile Ile Gly Arg Glu Asp Phe Pro Gln Lys Trp Pro
        115                    120                    125
Asp Leu Leu Thr Glu Met Val Asn Arg Phe Gln Ser Gly Asp Phe His
        130                    135                    140
Val Ile Asn Gly Val Leu Arg Thr Ala His Ser Leu Phe Lys Arg Tyr
145                    150                    155                    160
Arg His Glu Phe Lys Ser Asn Glu Leu Trp Thr Glu Ile Lys Leu Val
        165                    170                    175
Leu Asp Ala Phe Ala Leu Pro Leu Thr Asn Leu Phe Lys Ala Thr Ile
        180                    185                    190
Glu Leu Cys Ser Thr His Ala Asn Asp Ala Ser Ala Leu Arg Ile Leu
        195                    200                    205
Phe Ser Ser Leu Ile Leu Ile Ser Lys Leu Phe Tyr Ser Leu Asn Phe
        210                    215                    220
Gln Asp Leu Pro Glu Phe Phe Glu Asp Asn Met Glu Thr Trp Met Asn
225                    230                    235                    240
Asn Phe His Thr Leu Leu Thr Leu Asp Asn Lys Leu Leu Gln Thr Asp
        245                    250                    255
Asp Glu Glu Glu Ala Gly Leu Leu Glu Leu Lys Ser Gln Ile Cys
        260                    265                    270
Asp Asn Ala Ala Leu Tyr Ala Gln Lys Tyr Asp Glu Glu Phe Gln Arg
        275                    280                    285
Tyr Leu Pro Arg Phe Val Thr Ala Ile Trp Asn Leu Leu Val Thr Thr

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290	295	300
Gly Gln Glu Val Lys Tyr Asp Leu Leu Val Ser Asn Ala Ile Gln Phe		
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Leu Ala Ser Val Cys Glu Arg Pro His Tyr Lys Asn Leu Phe Glu Asp		320
	325	330
Gln Asn Thr Leu Thr Ser Ile Cys Glu Lys Val Ile Val Pro Asn Met		335
	340	345
Glu Phe Arg Ala Ala Asp Glu Glu Ala Phe Glu Asp Asn Ser Glu Glu		350
	355	360
Tyr Ile Arg Arg Asp Leu Glu Gly Ser Asp Ile Asp Thr Arg Arg Arg		365
	370	375
Ala Ala Cys Asp Leu Val Arg Gly Leu Cys Lys Phe Phe Glu Gly Pro		380
385	390	395
Val Thr Gly Ile Phe Ser Gly Tyr Val Asn Ser Met Leu Gln Glu Tyr		400
	405	410
Ala Lys Asn Pro Ser Val Asn Trp Lys His Lys Asp Ala Ala Ile Tyr		415
	420	425
Leu Val Thr Ser Leu Ala Ser Lys Ala Gln Thr Gln Lys His Gly Ile		430
	435	440
Thr Gln Ala Asn Glu Leu Val Asn Leu Thr Glu Phe Phe Val Asn His		445
	450	455
Ile Leu Pro Asp Leu Lys Ser Ala Asn Val Asn Glu Phe Pro Val Leu		460
465	470	475
Lys Ala Asp Gly Ile Lys Tyr Ile Met Ile Phe Arg Asn Gln Val Pro		480
	485	490
Lys Glu His Leu Leu Val Ser Ile Pro Leu Leu Ile Asn His Leu Gln		495
	500	505
Ala Glu Ser Ile Val Val His Thr Tyr Ala Ala His Ala Leu Glu Arg		510
	515	520
Leu Phe Thr Met Arg Gly Pro Asn Asn Ala Thr Leu Phe Thr Ala Ala		525
	530	535
Glu Ile Ala Pro Phe Val Glu Ile Leu Leu Thr Asn Leu Phe Lys Ala		540
545	550	555
Leu Thr Leu Pro Gly Ser Ser Glu Asn Glu Tyr Ile Met Lys Ala Ile		560
	565	570
Met Arg Ser Phe Ser Leu Leu Gln Glu Ala Ile Ile Pro Tyr Ile Pro		575
	580	585
Thr Leu Ile Thr Gln Leu Thr Gln Lys Leu Leu Ala Val Ser Lys Asn		590
	595	600
Pro Ser Lys Pro His Phe Asn His Tyr Met Phe Glu Ala Ile Cys Leu		605
	610	615
Ser Ile Arg Ile Thr Cys Lys Ala Asn Pro Ala Ala Val Val Asn Phe		620
625	630	635
Glu Glu Ala Leu Phe Leu Val Phe Thr Glu Ile Leu Gln Asn Asp Val		640
	645	650
Gln Glu Phe Ile Pro Tyr Val Phe Gln Val Met Ser Leu Leu Leu Glu		655
	660	665
Thr His Lys Asn Asp Ile Pro Ser Ser Tyr Met Ala Leu Phe Pro His		670
	675	680
Leu Leu Gln Pro Val Leu Trp Glu Arg Thr Gly Asn Ile Pro Ala Leu		685
	690	695
Val Arg Leu Leu Gln Ala Phe Leu Glu Arg Gly Ser Asn Thr Ile Ala		700
705	710	715
Ser Ala Ala Ala Asp Lys Ile Pro Gly Leu Leu Gly Val Phe Gln Lys		720
	725	730
Leu Ile Ala Ser Lys Ala Asn Asp His Gln Gly Phe Tyr Leu Leu Asn		735
	740	745
		750

Ser	Ile	Ile	Glu	His	Met	Pro	Pro	Glu	Ser	Val	Asp	Gln	Tyr	Arg	Lys
	755						760					765			
Gln	Ile	Phe	Ile	Leu	Leu	Phe	Gln	Arg	Leu	Gln	Asn	Ser	Lys	Thr	Thr
	770						775					780			
Lys	Phe	Ile	Lys	Ser	Phe	Leu	Val	Phe	Ile	Asn	Leu	Tyr	Cys	Ile	Lys
	785					790				795					800
Tyr	Gly	Ala	Leu	Ala	Leu	Gln	Glu	Ile	Phe	Asp	Gly	Ile	Gln	Pro	Lys
				805					810					815	
Met	Phe	Gly	Met	Val	Leu	Glu	Lys	Ile	Ile	Ile	Pro	Glu	Ile	Gln	Lys
			820					825					830		
Val	Ser	Gly	Asn	Val	Glu	Lys	Lys	Ile	Cys	Ala	Val	Gly	Ile	Thr	Lys
		835					840					845			
Leu	Leu	Thr	Glu	Cys	Pro	Pro	Met	Met	Asp	Thr	Glu	Tyr	Thr	Lys	Leu
	850					855					860				
Trp	Thr	Pro	Leu	Leu	Gln	Ser	Leu	Ile	Gly	Leu	Phe	Glu	Leu	Pro	Glu
	865				870					875					880
Asp	Asp	Thr	Ile	Pro	Asp	Glu	Glu	His	Phe	Ile	Asp	Ile	Glu	Asp	Thr
				885					890					895	
Pro	Gly	Tyr	Gln	Thr	Ala	Phe	Ser	Gln	Leu	Ala	Phe	Ala	Gly	Lys	Lys
		900						905					910		
Glu	His	Asp	Pro	Val	Gly	Gln	Met	Val	Asn	Asn	Pro	Lys	Ile	His	Leu
		915					920					925			
Ala	Gln	Ser	Leu	His	Lys	Leu	Ser	Thr	Ala	Cys	Pro	Gly	Arg	Val	Pro
	930					935					940				
Ser	Met	Val	Ser	Thr	Ser	Leu	Asn	Ala	Glu	Ala	Leu	Gln	Tyr	Leu	Gln
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Gly	Tyr	Leu	Gln	Ala	Ala	Ser	Val	Thr	Leu	Leu					
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<210> 468  
 <211> 3579  
 <212> DNA  
 <213> Homo sapiens

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 tagtgcactt gatgcttagc agcccagagc aaattcagaa gcagttaagt gatgcaatta 480  
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 aaacttggat gaataatttt catactctct taacattgga taataagctt ttacaaactg 900  
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 ctgctgatga agaagcattt gaagataatt ctgaggagta cataaggaga gatttggaa 1260

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<210> 469  
 <211> 234  
 <212> PRT  
 <213> Homo sapiens

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<400> 469
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Thr Arg Gly Gln Ile Gln Val Ile Leu Gly Pro Met Phe Ser Gly Lys
      20             25             30
Ser Thr Glu Leu Met Arg Arg Val Arg Arg Phe Gln Ile Ala Gln Tyr
      35             40             45
Lys Cys Leu Val Ile Lys Tyr Ala Lys Asp Thr Arg Tyr Ser Ser Ser
      50             55             60
Phe Cys Thr His Asp Arg Asn Thr Met Glu Ala Leu Pro Ala Cys Leu
      65             70             75             80
Leu Arg Asp Val Ala Gln Glu Ala Leu Gly Val Ala Val Ile Gly Ile

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	85		90		95										
Asp	Glu	Gly	Gln	Phe	Phe	Pro	Asp	Ile	Met	Glu	Phe	Cys	Glu	Ala	Met
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Ala	Asn	Ala	Gly	Lys	Thr	Val	Ile	Val	Ala	Ala	Leu	Asp	Gly	Thr	Phe
		115					120					125			
Gln	Arg	Lys	Pro	Phe	Gly	Ala	Ile	Leu	Asn	Leu	Val	Pro	Leu	Ala	Glu
	130					135					140				
Ser	Val	Val	Lys	Leu	Thr	Ala	Val	Cys	Met	Glu	Cys	Phe	Arg	Glu	Ala
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Ala	Tyr	Thr	Lys	Arg	Leu	Gly	Thr	Glu	Lys	Glu	Val	Glu	Val	Ile	Gly
			165					170						175	
Gly	Ala	Asp	Lys	Tyr	His	Ser	Val	Cys	Arg	Leu	Cys	Tyr	Phe	Lys	Lys
		180						185					190		
Ala	Ser	Gly	Gln	Pro	Ala	Gly	Pro	Asp	Asn	Lys	Glu	Asn	Cys	Pro	Val
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Pro	Gly	Lys	Pro	Gly	Glu	Ala	Val	Ala	Ala	Arg	Lys	Leu	Phe	Ala	Pro
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Gln	Gln	Ile	Leu	Gln	Cys	Ser	Pro	Ala	Asn						
	225				230										

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 <211> 1421  
 <212> DNA  
 <213> Homo sapiens

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 caggtgatcc tggggccgat gttctcagga aaaagcacag agttgatgag acgcgtccgt 180  
 cgcttccaga ttgtcagta caagtgcctg gtgatcaagt atgccaaaga cactcgctac 240  
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 ctggccgaga gcgtggtgaa gctgacggcg gtgtgcatgg agtgcttccg ggaagccgcc 540  
 tataccaaga ggctcggcac agagaaggag gtgcagggtga ttgggggagc agacaagtac 600  
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 ggcaccaacc ttgtgaggac ttggatccca ggggcttctc tcttcaagtg tggagagggc 1380  
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<210> 471  
 <211> 792  
 <212> PRT  
 <213> Homo sapiens

<400> 471

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Lys	Ile	Thr	Ser	Arg	Ile	Gln	Lys	Leu	Cys	Tyr	Gly	Leu	Asn	Met	Asp	20	25	30	
Phe	Val	Asp	Pro	Ala	Gln	Ile	Thr	Met	Lys	Val	Ile	Gln	Gly	Leu	Tyr	35	40	45	
Ser	Gly	Val	Thr	Thr	Val	Glu	Leu	Asp	Thr	Leu	Ala	Ala	Glu	Thr	Ala	50	55	60	
Ala	Thr	Leu	Thr	Thr	Lys	His	Pro	Asp	Tyr	Ala	Ile	Leu	Ala	Ala	Arg	65	70	75	80
Ile	Ala	Val	Ser	Asn	Leu	His	Lys	Glu	Thr	Lys	Lys	Val	Phe	Ser	Asp	85	90	95	
Val	Met	Glu	Asp	Leu	Tyr	Asn	Tyr	Ile	Asn	Pro	His	Asn	Gly	Lys	His	100	105	110	
Ser	Pro	Met	Val	Ala	Lys	Ser	Thr	Leu	Asp	Ile	Val	Leu	Ala	Asn	Lys	115	120	125	
Asp	Arg	Leu	Asn	Ser	Ala	Ile	Ile	Tyr	Asp	Arg	Asp	Phe	Ser	Tyr	Asn	130	135	140	
Tyr	Phe	Gly	Phe	Lys	Thr	Leu	Glu	Arg	Ser	Tyr	Leu	Leu	Lys	Ile	Asn	145	150	155	160
Gly	Lys	Val	Ala	Glu	Arg	Pro	Gln	His	Met	Leu	Met	Arg	Val	Ser	Val	165	170	175	
Gly	Ile	His	Lys	Glu	Asp	Ile	Asp	Ala	Ala	Ile	Glu	Thr	Tyr	Asn	Leu	180	185	190	
Leu	Ser	Glu	Arg	Trp	Phe	Thr	His	Ala	Ser	Pro	Thr	Leu	Phe	Asn	Ala	195	200	205	
Gly	Thr	Asn	Arg	Pro	Gln	Leu	Ser	Ser	Cys	Phe	Leu	Leu	Ser	Met	Lys	210	215	220	
Asp	Asp	Ser	Ile	Glu	Gly	Ile	Tyr	Asp	Thr	Leu	Lys	Gln	Cys	Ala	Leu	225	230	235	240
Ile	Ser	Lys	Ser	Ala	Gly	Gly	Ile	Gly	Val	Ala	Val	Ser	Cys	Ile	Arg	245	250	255	
Ala	Thr	Gly	Ser	Tyr	Ile	Ala	Gly	Thr	Asn	Gly	Asn	Ser	Asn	Gly	Leu	260	265	270	
Val	Pro	Met	Leu	Arg	Val	Tyr	Asn	Asn	Thr	Ala	Arg	Tyr	Val	Asp	Gln	275	280	285	
Gly	Gly	Asn	Lys	Arg	Pro	Gly	Ala	Phe	Ala	Ile	Tyr	Leu	Glu	Pro	Trp	290	295	300	
His	Leu	Asp	Ile	Phe	Glu	Phe	Leu	Asp	Leu	Lys	Lys	Asn	Thr	Gly	Lys	305	310	315	320
Glu	Glu	Gln	Arg	Ala	Arg	Asp	Leu	Phe	Phe	Ala	Leu	Trp	Ile	Pro	Asp	325	330	335	
Leu	Phe	Met	Lys	Arg	Val	Glu	Thr	Asn	Gln	Asp	Trp	Ser	Leu	Met	Cys	340	345	350	
Pro	Asn	Glu	Cys	Pro	Gly	Leu	Asp	Glu	Val	Trp	Gly	Glu	Glu	Phe	Glu	355	360	365	
Lys	Leu	Tyr	Ala	Ser	Tyr	Glu	Lys	Gln	Gly	Arg	Val	Arg	Lys	Val	Val	370	375	380	
Lys	Ala	Gln	Gln	Leu	Trp	Tyr	Ala	Ile	Ile	Glu	Ser	Gln	Thr	Glu	Thr	385	390	395	400
Gly	Thr	Pro	Tyr	Met	Leu	Tyr	Lys	Asp	Ser	Cys	Asn	Arg	Lys	Ser	Asn	405	410	415	
Gln	Gln	Asn	Leu	Gly	Thr	Ile	Lys	Cys	Ser	Asn	Leu	Cys	Thr	Glu	Ile	420	425	430	
Val	Glu	Tyr	Thr	Ser	Lys	Asp	Glu	Val	Ala	Val	Cys	Asn	Leu	Ala	Ser	435	440	445	

Leu Ala Leu Asn Met Tyr Val Thr Ser Glu His Thr Tyr Asp Phe Lys  
 450 455 460  
 Lys Leu Ala Glu Val Thr Lys Val Val Val Arg Asn Leu Asn Lys Ile  
 465 470 475 480  
 Ile Asp Ile Asn Tyr Tyr Pro Val Pro Glu Ala Cys Leu Ser Asn Lys  
 485 490 495  
 Arg His Arg Pro Ile Gly Ile Gly Val Gln Gly Leu Ala Asp Ala Phe  
 500 505 510  
 Ile Leu Met Arg Tyr Pro Phe Glu Ser Ala Glu Ala Gln Leu Leu Asn  
 515 520 525  
 Lys Gln Ile Phe Glu Thr Ile Tyr Tyr Gly Ala Leu Glu Ala Ser Cys  
 530 535 540  
 Asp Leu Ala Lys Glu Gln Gly Pro Tyr Glu Thr Tyr Glu Gly Ser Pro  
 545 550 555 560  
 Val Ser Lys Gly Ile Leu Gln Tyr Asp Met Trp Asn Val Thr Pro Thr  
 565 570 575  
 Asp Leu Trp Asp Trp Lys Val Leu Lys Glu Lys Ile Ala Lys Tyr Gly  
 580 585 590  
 Ile Arg Asn Ser Leu Leu Ile Ala Pro Met Pro Thr Ala Ser Thr Ala  
 595 600 605  
 Gln Ile Leu Gly Asn Asn Glu Ser Ile Glu Pro Tyr Thr Ser Asn Ile  
 610 615 620  
 Tyr Thr Arg Arg Val Leu Ser Gly Glu Phe Gln Ile Val Asn Pro His  
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 Leu Leu Lys Asp Leu Thr Glu Arg Gly Leu Trp His Glu Glu Met Lys  
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 660 665 670  
 Pro Asp Asp Leu Lys Gln Leu Tyr Lys Thr Val Trp Glu Ile Ser Gln  
 675 680 685  
 Lys Thr Val Leu Lys Met Ala Ala Glu Arg Gly Ala Phe Ile Asp Gln  
 690 695 700  
 Ser Gln Ser Leu Asn Ile His Ile Ala Glu Pro Asn Tyr Gly Lys Leu  
 705 710 715 720  
 Thr Ser Met His Phe Tyr Gly Trp Lys Gln Gly Leu Lys Thr Gly Met  
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 Tyr Tyr Leu Arg Thr Arg Pro Ala Ala Asn Pro Ile Gln Phe Thr Leu  
 740 745 750  
 Asn Lys Glu Lys Leu Lys Asp Lys Glu Lys Val Ser Lys Glu Glu Glu  
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 <212> DNA  
 <213> Homo sapiens

<400> 472  
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<210> 473  
 <211> 674  
 <212> PRT  
 <213> Homo sapiens

<400> 473  
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 Gly Ile Gln Val Lys Asn Glu Lys Asn Arg Pro Ser Leu Lys Ser Leu





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3729

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<210> 475  
 <211> 255  
 <212> PRT  
 <213> Homo sapiens

<400> 475  
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 20 25 30  
 Val Ile Glu Asn Leu Gly Ala Thr Leu Asp Gln Phe Asp Ala Ile Asp  
 35 40 45  
 Phe Ser Asp Asn Glu Ile Arg Lys Leu Asp Gly Phe Pro Leu Leu Arg  
 50 55 60  
 Arg Leu Lys Thr Leu Leu Val Asn Asn Asn Arg Ile Cys Arg Ile Gly  
 65 70 75 80

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Asn	Asn	Ser	Leu	Val	Glu	Leu	Gly	Asp	Leu	Asp	Pro	Leu	Ala	Ser	Leu
			100					105					110		
Lys	Ser	Leu	Thr	Tyr	Leu	Ser	Ile	Leu	Arg	Asn	Pro	Val	Thr	Asn	Lys
		115					120					125			
Lys	His	Tyr	Arg	Leu	Tyr	Val	Ile	Tyr	Lys	Val	Pro	Gln	Val	Arg	Val
	130					135					140				
Leu	Asp	Phe	Gln	Lys	Val	Lys	Leu	Lys	Glu	Arg	Gln	Glu	Ala	Glu	Lys
145					150				155						160
Met	Phe	Lys	Gly	Lys	Arg	Gly	Ala	Gln	Leu	Ala	Lys	Asp	Ile	Ala	Arg
			165					170						175	
Arg	Ser	Lys	Thr	Phe	Asn	Pro	Gly	Ala	Gly	Leu	Pro	Thr	Asp	Lys	Lys
			180					185					190		
Arg	Gly	Gly	Pro	Ser	Pro	Gly	Asp	Val	Glu	Ala	Ile	Lys	Asn	Ala	Ile
	195					200					205				
Ala	Asn	Ala	Ser	Thr	Leu	Ala	Glu	Val	Glu	Arg	Leu	Lys	Gly	Leu	Leu
	210					215					220				
Gln	Ser	Gly	Gln	Ile	Pro	Gly	Arg	Glu	Arg	Arg	Ser	Gly	Pro	Thr	Asp
225					230				235						240
Asp	Gly	Glu	Glu	Glu	Met	Glu	Glu	Asp	Thr	Val	Thr	Asn	Gly	Ser	
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<210> 476  
 <211> 1054  
 <212> DNA  
 <213> Homo sapiens

<400> 476  
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 tggtgagaag actgaaaaca ttgttagtga acaacaacag aatatgccgt ataggtgagg 300  
 gacttgatca ggctctgccc tgtctgacag aactcattct caccaataat agtctcgtgg 360  
 aactgggtga tctggaccct ctggcatctc tcaaatcgct gacttaccta agtataccta 420  
 gaaatccggt aaccaataag aagcattaca gattgtatgt gatttataaa gttccgcaag 480  
 tcagagtact ggatttccag aaagtgaac taaaagagcg tcaggaagca gagaaaatgt 540  
 tcaagggcaa acgggggtgca cagcttgcaa aggatattgc caggagaagc aaaactttta 600  
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 aagcaatcaa gaatgccata gcaaatgctt caactctggc tgaagtggag aggtgaagg 720  
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 tgtgttagca aagtggaatc tatcagcatt gttgaaatgc ttaagactgc tgctgataat 960  
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<210> 477  
 <211> 241  
 <212> PRT  
 <213> Homo sapiens

<400> 477  
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			20					25					30		
Thr	Gly	Lys	Glu	Asp	Ala	Ala	Asn	Asn	Tyr	Ala	Trp	Gly	His	Tyr	Thr
		35					40					45			
Ile	Gly	Lys	Glu	Phe	Ile	Asp	Leu	Leu	Leu	Asp	Arg	Ile	Arg	Lys	Leu
	50					55					60				
Ala	Asp	Gln	Cys	Thr	Gly	Leu	Gln	Gly	Phe	Leu	Val	Phe	His	Ser	Leu
65					70					75					80
Gly	Arg	Gly	Thr	Gly	Ser	Asp	Val	Thr	Ser	Phe	Leu	Met	Glu	Trp	Leu
			85					90						95	
Ser	Val	Asn	Tyr	Gly	Lys	Lys	Ser	Lys	Leu	Gly	Phe	Ser	Ile	Tyr	Pro
		100						105					110		
Ala	Pro	Gln	Val	Ser	Thr	Ala	Met	Val	Gln	Pro	Tyr	Asn	Ser	Ile	Leu
		115					120					125			
Thr	Thr	His	Thr	Thr	Leu	Glu	His	Ser	Asp	Cys	Ala	Phe	Met	Val	Asp
	130				135						140				
Asn	Lys	Ala	Ile	Tyr	Asp	Ile	Cys	His	Arg	Asn	Leu	Asp	Ile	Glu	Arg
145					150					155					160
Pro	Thr	Tyr	Thr	Asn	Leu	Asn	Arg	Leu	Ile	Ser	Gln	Ile	Val	Ser	Ser
			165					170						175	
Ile	Thr	Ala	Ser	Leu	Arg	Phe	Asp	Gly	Ala	Leu	Asn	Val	Asp	Leu	Thr
		180						185					190		
Glu	Phe	Gln	Thr	Asn	Leu	Val	Ser	Tyr	Leu	Thr	Ser	Thr	Ser	Pro	Trp
	195						200				205				
Pro	Pro	Met	His	Gln	Ser	Ser	Leu	Gln	Lys	Lys	Tyr	Thr	Thr	Ser	Ser
	210					215					220				
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Trp															

<210> 478  
 <211> 1380  
 <212> DNA  
 <213> Homo sapiens

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<210> 479  
 <211> 175  
 <212> PRT  
 <213> Homo sapiens

<400> 479  
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 Thr Ser Arg Val Leu Gln Asn Val Ala Phe Ser Val Gln Lys Glu Val  
 35 40 45  
 Glu Lys Asn Leu Lys Ser Cys Leu Asp Asn Val Asn Val Val Ser Val  
 50 55 60  
 Asp Thr Ala Arg Thr Leu Phe Asn Gln Val Met Glu Lys Glu Phe Glu  
 65 70 75 80  
 Asp Gly Ile Ile Asn Trp Gly Arg Ile Val Thr Ile Phe Ala Phe Glu  
 85 90 95  
 Gly Ile Leu Ile Lys Lys Leu Leu Arg Gln Gln Ile Ala Pro Asp Val  
 100 105 110  
 Asp Thr Tyr Lys Glu Ile Ser Tyr Phe Val Ala Glu Phe Ile Met Asn  
 115 120 125  
 Asn Thr Gly Glu Trp Ile Arg Gln Asn Gly Gly Trp Glu Asn Gly Phe  
 130 135 140  
 Val Lys Lys Phe Glu Pro Lys Ser Gly Trp Met Thr Phe Leu Glu Val  
 145 150 155 160  
 Thr Gly Lys Ile Cys Glu Met Leu Ser Leu Leu Lys Gln Tyr Cys  
 165 170 175

<210> 480  
 <211> 885  
 <212> DNA  
 <213> Homo sapiens

<400> 480  
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 gcacattgcc tcaacagctt caaggtgagc cagctcaaga ctttgccttc caccaggcag 180  
 aagatgacag actgtgaatt tggatatatt tacaggctgg ctcaggacta tctgcagtgc 240  
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 aatgtttgtg ccgtagacac tgccagaaca ctattcaacc aagtgatgga aaaggagttt 420  
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 aactccata ttgtgaaacc ggccataatt ttctgactga tatggaaacg attgccaaca 780  
 catacttcta cttttaaata aacaactttg atgatgtaac ttgaccttc agagttatgg 840  
 aaattttgtc cccatgtaat gaataaattg tatgtatttt tctct 885

<210> 481  
 <211> 104  
 <212> PRT  
 <213> Homo sapiens

<400> 481  
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 20 25 30  
 Cys Lys Met Tyr Glu Glu His Leu Lys Arg Met Asn Pro Asn Ser Pro  
 35 40 45  
 Ser Ile Thr Tyr Asp Ile Ser Gln Leu Phe Asp Phe Ile Asp Asp Leu  
 50 55 60  
 Ala Asp Leu Ser Cys Leu Val Tyr Arg Ala Asp Thr Gln Thr Tyr Gln  
 65 70 75 80  
 Pro Tyr Asn Lys Asp Trp Ile Lys Glu Lys Ile Tyr Val Leu Leu Arg  
 85 90 95  
 Arg Gln Ala Gln Gln Ala Gly Lys  
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<210> 482  
 <211> 815  
 <212> DNA  
 <213> Homo sapiens

<400> 482  
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 aagaacatct gaaaagaatg aatcccaaca gtccctctat cacatatgac atcagtcagt 240  
 tgtttgattt catcgatgat ctggcagacc tcagctgcct ggtttaccga gctgataccc 300  
 agacatacca gccttataac aaagactgga ttaaagagaa gatctacgtg ctcttcgctc 360  
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 tccactttgt tatactctag ccaagattga ctgtattaga tgaaatgtga ggatcttgtt 540  
 caatcggaaa ccccggttac ctctctcttt tctttctctt tctttttttt ttttttactt 600  
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 ccttcaactg ttcatatcta ctttataaca ttcacatact aacccttctt caagatgggg 720  
 tgggggggtg aaatgcagtt tagccatgtc ctcaagataa agtcttggtg aaaataaata 780  
 aatgtccttt agttataaaa aaaaaaaaaa aaaaa 815

<210> 483  
 <211> 857  
 <212> PRT  
 <213> Homo sapiens

<400> 483  
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 Ser Gly Thr Val Asn Gln Ile Met Met Met Ala Asn Asn Pro Glu Asp

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Glu	Pro	Leu	Val	Ser	Asp	Glu	Lys	Ser	Ser	Glu	Leu	Ile	Ile	Thr	Asp
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Asn	Thr	Glu	Gln	Lys	His	Thr	Thr	Phe	Glu	Gln	Pro	Val	Phe	Ser	Val
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 Asp Asn Gln Thr Leu Asp Ser Tyr Arg Asn Glu Ile Ala Tyr Leu Asn  
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 Lys Ser Tyr Trp Lys Asn Met Leu Glu Ala Val His Thr Ile His Gln  
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 His Gly Ile Val His Ser Asp Leu Lys Pro Ala Asn Phe Leu Ile Val  
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 Pro Asp Thr Thr Ser Val Val Lys Asp Ser Gln Val Gly Thr Val Asn  
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 Gly Cys Ile Leu Tyr Tyr Met Thr Tyr Gly Lys Thr Pro Phe Gln Gln  
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 Lys Cys Cys Leu Lys Arg Asp Pro Lys Gln Arg Ile Ser Ile Pro Glu  
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 <211> 2984  
 <212> DNA  
 <213> Homo sapiens

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<210> 485  
 <211> 725  
 <212> PRT  
 <213> Homo sapiens

<400> 485  
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 Thr Val Asn Leu Glu Lys Ser Cys Val Ser Val Glu Trp Ala Glu Gly



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Thr	Gln	Val	Leu	Arg	Asp	Ser	Phe	Ile	Gly	Glu	Asn	Ser	Arg	Thr	Cys
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Asn	Thr	Leu	Arg	Tyr	Ala	Asp	Arg	Val	Lys	Glu	Leu	Ser	Pro	His	Ser
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Gly	Pro	Ser	Gly	Glu	Gln	Leu	Ile	Gln	Met	Glu	Thr	Glu	Glu	Met	Glu
		595					600					605			
Ala	Cys	Ser	Asn	Gly	Ala	Leu	Ile	Pro	Gly	Asn	Leu	Ser	Lys	Glu	Glu
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Glu	Glu	Leu	Ser	Ser	Gln	Met	Ser	Ser	Phe	Asn	Glu	Ala	Met	Thr	Gln
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Ile	Arg	Glu	Leu	Glu	Glu	Lys	Ala	Met	Glu	Glu	Leu	Lys	Glu	Ile	Ile
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<210> 486

<211> 2825

<212> DNA

<213> Homo sapiens

<400> 486

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<210> 487  
 <211> 566  
 <212> PRT  
 <213> Homo sapiens

<400> 487

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Val	Cys	Asp	Thr	His	Arg	Pro	Val	Asn	Val	Val	Asn	Val	Tyr	Asn	Asp
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<400> 488

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cttcttattt atgtaactgg ctttcattta gattgtaagt tatggacatg atttgagatg 1860
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<210> 489

<211> 219

<212> PRT

<213> Homo sapiens

<400> 489

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20          25          30
Arg Lys Ala Ser Gly Pro Pro Val Ser Glu Leu Ile Thr Lys Ala Val
35          40          45
Ala Ala Ser Lys Glu Arg Ser Gly Val Ser Leu Ala Ala Leu Lys Lys
50          55          60
Ala Leu Ala Ala Ala Gly Tyr Asp Val Glu Lys Asn Asn Ser Arg Ile
65          70          75          80
Lys Leu Gly Leu Lys Ser Leu Val Ser Lys Gly Thr Leu Val Gln Thr
85          90          95
Lys Gly Thr Gly Ala Ser Gly Ser Phe Lys Leu Asn Lys Lys Ala Ala
100         105         110
Ser Gly Glu Ala Lys Pro Lys Ala Lys Lys Ala Gly Ala Ala Lys Ala
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115	120	125
Lys Lys Pro Ala Gly Ala Ala Lys Lys Pro Lys Lys Ala Thr Gly Ala		
130	135	140
Ala Thr Pro Lys Lys Ser Ala Lys Lys Thr Pro Lys Lys Ala Lys Lys		
145	150	155
Pro Ala Ala Ala Ala Gly Ala Lys Lys Ala Lys Ser Pro Lys Lys Ala		160
165	170	175
Lys Ala Ala Lys Pro Lys Lys Ala Pro Lys Ser Pro Ala Lys Ala Lys		
180	185	190
Ala Val Lys Pro Lys Ala Ala Lys Pro Lys Thr Ala Lys Pro Lys Ala		
195	200	205
Ala Lys Pro Lys Lys Ala Ala Ala Lys Lys Lys		
210	215	

<210> 490  
 <211> 785  
 <212> DNA  
 <213> Homo sapiens

<400> 490  
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 aagaagaagg cccgcaagtc tgcaggtgcg gccaaagcga aagcgtctgg gcccccggtg 180  
 tccgagctca ttactaaagc tgttgccgcc tccaaggagc gcagcggcgt atctttggcc 240  
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 aagctgggtc tcaagagcct ggtgagcaag ggcaccctgg tgcagaccaa gggcaccggc 360  
 gcgtcgggtt ccttcaaact caacaagaag gcgcctctg gggaagccaa gcctaaggct 420  
 aaaaaggcag gcgcggccaa ggccaagaag ccagcaggag cggcgaagaa gccaagaag 480  
 gcgacggggg cggccacccc caagaagagc gccaagaaga ccccaaagaa ggcgaagaag 540  
 ccggctgcag ctgctggagc caaaaaagcg aaaagcccga aaaaggcgaa agcagccaag 600  
 ccaaaaaagg cgcccaagag ccagcgaag gccaaagcag ttaaacccaa ggcggctaaa 660  
 ccaaaagaccg ccaagcccaa ggcagccaag ccaaagaagg cggcagccaa gaaaaagtag 720  
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 accca 785

<210> 491  
 <211> 910  
 <212> PRT  
 <213> Homo sapiens

<400> 491  
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 Glu Ile Thr Lys Leu Asn Pro Asp Ile Lys Leu Phe Glu Gly Val Ala  
 35 40 45  
 Ile Asn Asn Thr Phe Leu Pro Ser Gln Asn Asp Leu Arg Ile Cys Ser  
 50 55 60  
 Leu Asn Leu Pro Ser Glu Glu Ser Thr Arg Glu Ile Asn Asn Arg Asp  
 65 70 75 80  
 Asn Cys Ser Gly Lys Tyr Cys Phe Glu Ala Pro Thr Leu Ala Thr Leu  
 85 90 95  
 Asp Pro Pro His Thr Val His Ser Ala Pro Lys Glu Val Ala Val Ser  
 100 105 110  
 Lys Glu Gln Glu Glu Lys Ser Asp Ser Leu Val Lys Tyr Phe Ser Val



Glu	Asn	Ser	Pro	His	Leu	Ile	Cys	Ile	Gly	Ala	Leu	Lys	Lys	Leu	Cys	580	585	590
Asn	His	Pro	Cys	Leu	Leu	Phe	Asn	Ser	Ile	Lys	Glu	Lys	Glu	Cys	Ser	595	600	605
Ser	Thr	Cys	Asp	Lys	Asn	Glu	Glu	Lys	Ser	Leu	Tyr	Lys	Gly	Leu	Leu	610	615	620
Ser	Val	Phe	Pro	Ala	Asp	Tyr	Asn	Pro	Leu	Leu	Phe	Thr	Glu	Lys	Glu	625	630	635
Ser	Gly	Lys	Leu	Gln	Val	Leu	Ser	Lys	Leu	Leu	Ala	Val	Ile	His	Glu	645	650	655
Leu	Arg	Pro	Thr	Glu	Lys	Val	Val	Leu	Val	Ser	Asn	Tyr	Thr	Gln	Thr	660	665	670
Leu	Asn	Ile	Leu	Gln	Glu	Val	Cys	Lys	Arg	His	Gly	Tyr	Ala	Tyr	Thr	675	680	685
Arg	Leu	Asp	Gly	Gln	Thr	Pro	Ile	Ser	Gln	Arg	Gln	Gln	Ile	Val	Asp	690	695	700
Gly	Phe	Asn	Ser	Gln	His	Ser	Ser	Phe	Phe	Ile	Phe	Leu	Leu	Ser	Ser	705	710	715
Lys	Ala	Gly	Gly	Val	Gly	Leu	Asn	Leu	Ile	Gly	Gly	Ser	His	Leu	Ile	725	730	735
Leu	Tyr	Asp	Ile	Asp	Trp	Asn	Pro	Ala	Thr	Asp	Ile	Gln	Ala	Met	Ser	740	745	750
Arg	Val	Trp	Arg	Asp	Gly	Gln	Lys	Tyr	Pro	Val	His	Ile	Tyr	Arg	Leu	755	760	765
Leu	Thr	Thr	Gly	Thr	Ile	Glu	Glu	Lys	Ile	Tyr	Gln	Arg	Gln	Ile	Ser	770	775	780
Lys	Gln	Gly	Leu	Cys	Gly	Ala	Val	Val	Asp	Leu	Thr	Lys	Thr	Ser	Glu	785	790	795
His	Ile	Gln	Phe	Ser	Val	Glu	Glu	Leu	Lys	Asn	Leu	Phe	Thr	Leu	His	805	810	815
Glu	Ser	Ser	Asp	Cys	Val	Thr	His	Asp	Leu	Leu	Asp	Cys	Glu	Cys	Thr	820	825	830
Gly	Glu	Glu	Val	His	Thr	Gly	Asp	Ser	Leu	Glu	Lys	Phe	Ile	Val	Ser	835	840	845
Arg	Asp	Cys	Gln	Leu	Gly	Pro	His	His	Gln	Lys	Ser	Asn	Ser	Leu	Lys	850	855	860
Pro	Leu	Ser	Met	Ser	Gln	Leu	Lys	Gln	Trp	Lys	His	Phe	Ser	Gly	Asp	865	870	875
His	Leu	Asn	Leu	Thr	Asp	Pro	Phe	Leu	Glu	Arg	Ile	Thr	Glu	Asn	Val	885	890	895
Ser	Phe	Ile	Phe	Gln	Asn	Ile	Thr	Thr	Gln	Ala	Thr	Gly	Thr			900	905	910

<210> 492  
 <211> 3057  
 <212> DNA  
 <213> Homo sapiens

<400> 492  
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 gtcagttgca ggggaattcc ttcaaaaaaac caaaatttat acctccagga agaagtaatc 180  
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 ttgaagcacc tacactggca acattagatc cacctcatat agttcattcg gctcctaaag 420

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<210> 493
<211> 209
<212> PRT
<213> Homo sapiens

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<400> 493
Met Gly Lys Gly Asp Pro Asn Lys Pro Arg Gly Lys Met Ser Ser Tyr
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      20             25             30
Asp Ser Ser Val Asn Phe Ala Glu Phe Ser Lys Lys Cys Ser Glu Arg
      35             40             45

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Trp	Lys	Thr	Met	Ser	Ala	Lys	Glu	Lys	Ser	Lys	Phe	Glu	Asp	Met	Ala
50						55					60				
Lys	Ser	Asp	Lys	Ala	Arg	Tyr	Asp	Arg	Glu	Met	Lys	Asn	Tyr	Val	Pro
65					70					75					80
Pro	Lys	Gly	Asp	Lys	Lys	Gly	Lys	Lys	Lys	Asp	Pro	Asn	Ala	Pro	Lys
				85					90					95	
Arg	Pro	Pro	Ser	Ala	Phe	Phe	Leu	Phe	Cys	Ser	Glu	His	Arg	Pro	Lys
			100					105					110		
Ile	Lys	Ser	Glu	His	Pro	Gly	Leu	Ser	Ile	Gly	Asp	Thr	Ala	Lys	Lys
	115						120					125			
Leu	Gly	Glu	Met	Trp	Ser	Glu	Gln	Ser	Ala	Lys	Asp	Lys	Gln	Pro	Tyr
	130						135				140				
Glu	Gln	Lys	Ala	Ala	Lys	Leu	Lys	Glu	Lys	Tyr	Glu	Lys	Asp	Ile	Ala
145					150					155					160
Ala	Tyr	Arg	Ala	Lys	Gly	Lys	Ser	Glu	Ala	Gly	Lys	Lys	Gly	Pro	Gly
				165					170					175	
Arg	Pro	Thr	Gly	Ser	Lys	Lys	Lys	Asn	Glu	Pro	Glu	Asp	Glu	Glu	Glu
			180					185					190		
Glu	Glu	Glu	Glu	Glu	Asp	Glu	Asp	Glu	Glu	Glu	Glu	Asp	Glu	Asp	Glu
	195						200						205		
Glu															

<210> 494  
 <211> 1277  
 <212> DNA  
 <213> Homo sapiens

<400> 494  
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 agccaaagat aaacaacat atgaacagaa agcagctaag ctaaaggaga aatatgaaaa 660  
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 gccaacaggc tcaaagaaga agaacgaacc agaagatgag gaggaggagg aggaagaaga 780  
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 agctcaatac tagcttcagt ataaaaactg tacagatttt tgtatagctg ataagattct 960  
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 ctgtgtgtat ggtagcacag caaacttgta ggaattagta tcaatagtaa attttgggtt 1140  
 ttttaggatg ttgcatttcg tttttttaa aaaaattttg taataaaatt atgtatatta 1200  
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<210> 495  
 <211> 874  
 <212> PRT  
 <213> Homo sapiens



<400> 495

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Thr	Arg	Glu	Asn	Gly	Glu	Pro	Asp	Ala	Phe	Asp	Glu	Leu	Phe	Asp	Ala	35	40	45	
Asp	Gly	Asp	Gly	Glu	Ser	Tyr	Thr	Glu	Glu	Ala	Asp	Asp	Gly	Glu	Thr	50	55	60	
Gly	Glu	Thr	Arg	Asp	Glu	Lys	Glu	Asn	Leu	Ala	Thr	Leu	Phe	Gly	Asp	65	70	75	80
Met	Glu	Asp	Leu	Thr	Asp	Glu	Glu	Glu	Val	Pro	Ala	Ser	Gln	Ser	Thr	85	90	95	
Glu	Asn	Arg	Val	Leu	Pro	Ala	Pro	Ala	Pro	Arg	Arg	Glu	Lys	Thr	Asn	100	105	110	
Glu	Glu	Leu	Gln	Glu	Glu	Leu	Arg	Asn	Leu	Gln	Glu	Gln	Met	Lys	Ala	115	120	125	
Leu	Gln	Glu	Gln	Leu	Lys	Val	Thr	Thr	Ile	Lys	Gln	Thr	Ala	Ser	Pro	130	135	140	
Ala	Arg	Leu	Gln	Lys	Ser	Pro	Glu	Lys	Ser	Pro	Arg	Pro	Pro	Leu	Lys	145	150	155	160
Glu	Arg	Arg	Val	Gln	Arg	Ile	Gln	Glu	Ser	Thr	Cys	Phe	Ser	Ala	Glu	165	170	175	
Leu	Asp	Val	Pro	Ala	Leu	Pro	Arg	Thr	Lys	Arg	Val	Ala	Arg	Thr	Pro	180	185	190	
Lys	Ala	Ser	Pro	Pro	Asp	Pro	Lys	Ser	Ser	Ser	Ser	Arg	Met	Thr	Ser	195	200	205	
Ala	Pro	Ser	Gln	Pro	Leu	Gln	Thr	Ile	Ser	Arg	Asn	Lys	Pro	Ser	Gly	210	215	220	
Ile	Thr	Arg	Gly	Gln	Ile	Val	Gly	Thr	Pro	Gly	Ser	Ser	Gly	Glu	Thr	225	230	235	240
Thr	Gln	Pro	Ile	Cys	Val	Glu	Ala	Phe	Ser	Gly	Leu	Arg	Leu	Arg	Arg	245	250	255	
Pro	Arg	Val	Ser	Ser	Thr	Glu	Met	Asn	Lys	Lys	Met	Thr	Gly	Arg	Lys	260	265	270	
Leu	Ile	Arg	Leu	Ser	Gln	Ile	Lys	Glu	Lys	Met	Ala	Arg	Glu	Lys	Leu	275	280	285	
Glu	Glu	Ile	Asp	Trp	Val	Thr	Phe	Gly	Val	Ile	Leu	Lys	Lys	Val	Thr	290	295	300	
Pro	Gln	Ser	Val	Asn	Ser	Gly	Lys	Thr	Phe	Ser	Ile	Trp	Lys	Leu	Asn	305	310	315	320
Asp	Leu	Arg	Asp	Leu	Thr	Gln	Cys	Val	Ser	Leu	Phe	Leu	Phe	Gly	Glu	325	330	335	
Val	His	Lys	Ala	Leu	Trp	Lys	Thr	Glu	Gln	Gly	Thr	Val	Val	Gly	Ile	340	345	350	
Leu	Asn	Ala	Asn	Pro	Met	Lys	Pro	Lys	Asp	Gly	Ser	Glu	Glu	Val	Cys	355	360	365	
Leu	Ser	Ile	Asp	His	Pro	Gln	Lys	Val	Leu	Ile	Met	Gly	Glu	Ala	Leu	370	375	380	
Asp	Leu	Gly	Thr	Cys	Lys	Ala	Lys	Lys	Lys	Asn	Gly	Glu	Pro	Cys	Thr	385	390	395	400
Gln	Thr	Val	Asn	Leu	Arg	Asp	Cys	Glu	Tyr	Cys	Gln	Tyr	His	Val	Gln	405	410	415	
Ala	Gln	Tyr	Lys	Lys	Leu	Ser	Ala	Lys	Arg	Ala	Asp	Leu	Gln	Ser	Thr	420	425	430	
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<210> 496  
 <211> 4532  
 <212> DNA  
 <213> Homo sapiens

<400> 496

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 50             55             60
Leu Thr Ser Lys Asp Pro Asp Ile Lys Ala Gln Tyr Gln Gln Arg Trp
 65             70             75             80
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Gln Thr Leu Gly Thr Glu Thr Tyr Arg Pro Ser Ser Ala Ser Gln Cys
100            105            110
Val Ala Gly Ile Ala Cys Ala Glu Ile Pro Val Asn Gln Trp Pro Glu
115            120            125
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His Met Lys Glu Ser Thr Leu Glu Ala Ile Gly Tyr Ile Cys Gln Asp
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ttcttcagca	caaccgtcac	caaccccgag	cccattgggca	agcagggccg	cgtgctccac	4860
ccagagcagc	accgtgtggt	gagcgtgcgg	gagtggtccc	gctcccaggg	cttccctgac	4920
acctaccggc	tcttcggcaa	catcctggac	aagcaccggc	agggtgggcaa	tgcctgcca	4980
ccgccccctg	ccaaagccat	tggcttggag	atcaagcttt	gtatgttggc	caaagccccg	5040
gagagtgcct	cagctaaaa	aaaggaggag	gaagctgcta	aggactagtt	ctgccctccc	5100
gtcacccctg	tttctggcac	caggaatccc	caacatgcac	tgatgttgtg	tttttaacat	5160
gtcaatctgt	cgttccacat	gtgtgggtaca	tggtgtttgt	ggccttgggt	gacatgaagc	5220
tggtgtgtga	ggttcgctta	tcaactaatg	atttagtgat	caaattgtgc	agtactttgt	5280
gcattctgga	ttttaaaagt	tttttattat	gcattatata	aaatctacca	ctgtatgagt	5340
ggaaattaag	actttatgta	gtttttatat	gttgtaatat	ttcttcaaat	aaatctctcc	5400
tataaaccaa	aaaaaaaaaa	aaaaaaaaaa	aaaa			5434

<210> 507  
 <211> 107  
 <212> PRT  
 <213> Homo sapiens

<400> 507  
 Met Ala Arg Ala Ala Leu Ser Ala Ala Pro Ser Asn Pro Arg Leu Leu

1				5					10					15					
Arg	Val	Ala	Leu	Leu	Leu	Leu	Leu	Val	Ala	Ala	Gly	Arg	Arg	Ala					
			20					25						30					
Ala	Gly	Ala	Ser	Val	Ala	Thr	Glu	Leu	Arg	Cys	Gln	Cys	Leu	Gln	Thr				
		35					40					45							
Leu	Gln	Gly	Ile	His	Pro	Lys	Asn	Ile	Gln	Ser	Val	Asn	Val	Lys	Ser				
	50					55					60								
Pro	Gly	Pro	His	Cys	Ala	Gln	Thr	Glu	Val	Ile	Ala	Thr	Leu	Lys	Asn				
65					70					75					80				
Gly	Arg	Lys	Ala	Cys	Leu	Asn	Pro	Ala	Ser	Pro	Ile	Val	Lys	Lys	Ile				
				85					90					95					
Ile	Glu	Lys	Met	Leu	Asn	Ser	Asp	Lys	Ser	Asn									
			100					105											

<210> 508  
 <211> 1103  
 <212> DNA  
 <213> Homo sapiens

<400> 508  
 cacagagccc gggccgcagg cacctcctcg ccagctcttc cgtcctctc acagccgcca 60  
 gacccgcctg ctgagcccca tggccgcgc tgctctctcc gccgccccca gcaatccccg 120  
 gctcctgcga gtggcactgc tgctcctgct cctggtagcc gctggccggc gcgcagcagg 180  
 agcgtccgtg gccactgaac tgcgctgcca gtgcttgag accctgcagg gaattcacc 240  
 caagaacatc caaagtgtga acgtgaagtc ccccggaacc cactgcgccc aaaccgaagt 300  
 catagccaca ctcaagaatg ggccgaaagc ttgcctcaat cctgcatccc ccatagttaa 360  
 gaaaatcatc gaaaagatgc tgaacagtga caaatccaac tgaccagaag ggaggaggaa 420  
 gctcactggt ggctgttcct gaaggaggcc ctgcccttat aggaacagaa gaggaaagag 480  
 agacacagct gcagaggcca cctggattgt gcctaattgt tttgagcatc gcttaggaga 540  
 agtcttctat ttatttattt attcattagt tttgaagatt ctatgttaat attttagggtg 600  
 taaaataatt aagggtatga ttaactctac ctgcacactg tcctattata ttcattcttt 660  
 ttgaaatgtc aaccccaagt tagttcaatc tggattcata tttaatttga aggtagaatg 720  
 ttttcaaatg ttctccagtc attatgttaa tttttctgag gagcctgcaa catgccagcc 780  
 actgtgatag aggctggcgg atccaagcaa atggccaatg agatcattgt gaaggcaggg 840  
 gaatgtatgt gcacatctgt tttgtaactg tttagatgaa tgtcagttgt tatttattga 900  
 aatgatttca cagtgtgtgg tcaacatttc tcatgttgaa actttaagaa ctaaaatgtt 960  
 ctaaataatc cttggacatt ttatgtcttt cttgtaaggc atactgcctt gtttaatgg 1020  
 agttttacag tgtttctggc ttagaacaaa ggggcttaat tattgatgtt ttcatagaga 1080  
 atataaaaat aaagcactta tag 1103

<210> 509  
 <211> 107  
 <212> PRT  
 <213> Homo sapiens

<400> 509  
 Met Ala Arg Ala Thr Leu Ser Ala Ala Pro Ser Asn Pro Arg Leu Leu  
 1 5 10 15  
 Arg Val Ala Leu Leu Leu Leu Leu Val Ala Ala Ser Arg Arg Ala  
 20 25 30  
 Ala Gly Ala Pro Leu Ala Thr Glu Leu Arg Cys Gln Cys Leu Gln Thr  
 35 40 45  
 Leu Gln Gly Ile His Leu Lys Asn Ile Gln Ser Val Lys Val Lys Ser  
 50 55 60  
 Pro Gly Pro His Cys Ala Gln Thr Glu Val Ile Ala Thr Leu Lys Asn  
 65 70 75 80

Gly Gln Lys Ala Cys Leu Asn Pro Ala Ser Pro Met Val Lys Lys Ile  
85 90 95  
Ile Glu Lys Met Leu Lys Asn Gly Lys Ser Asn  
100 105

<210> 510  
<211> 1110  
<212> DNA  
<213> Homo sapiens

<400> 510  
gacagagccc gggccacgga gctccttgcc agctctcttc ctgcacacgc cgctcgaacc 60  
gcttgcctgag ccccatggcc cgcgcacgc tctccgcgc cccagcaat ccccggtcc 120  
tgccgggtggc gctgctgctc ctgctcctgg tggccgccag ccggcgcgca gcaggagcgc 180  
ccctggccac tgaactgogc tgccagtgtc tgcagaccct gcagggaatt cacctcaaga 240  
acatccaaag tgtgaagggtg aagtcccccg gacccactg cgcctcaaacc gaagtcatag 300  
ccacactcaa gaatgggcag aaagcttgct tcaaccccg atcgcccatg gttaagaaaa 360  
tcatcgaaaa gatgctgaaa aatggcaaat ccaactgacc agaaggaagg aggaagctta 420  
ttggtggctg ttctgaagg aggccttgcc ttacaggaac agaagaggaa agagagacac 480  
agctgcagag gccacctggc ttgcgcctaa tgtgtttgag catacttagg agaagtcttc 540  
tatttattta tttatttatt tatttgtttg ttttagaaga ttctatgtta atattttatg 600  
tgtaaaataa gggtatgatt gaatctactt gcacactctc ccattatatt tattgtttat 660  
tttaggtcaa acccaagtta gttcaatcct gattcatatt taatttgaag atagaagggt 720  
tgcagatatt ctctagtcac ttgttaatat ttcttctgta tgacatatca catgtcagcc 780  
actgtgatag aggtcgagga atccaagaaa atggccagta agatcaatgt gacggcaggg 840  
aaatgtatgt gtgtctattt tgtaactgta aagatgaatg tcagttgtta tttattgaaa 900  
tgatttcaca gtgtgtggc aacatttctc atgttgaagc tttagaact aaaatgttct 960  
aaatatccct tggcatttta tgtctttctt gtaagatact gccttgttta atgttaatta 1020  
tgcagtgttt ccctctgtgt tagagcagag aggtttcgat atttattgat gttttcacia 1080  
agaacaggaa aataaaatat ttaaaaatat 1110

<210> 511  
<211> 99  
<212> PRT  
<213> Homo sapiens

<400> 511  
Met Thr Ser Lys Leu Ala Val Ala Leu Leu Ala Ala Phe Leu Ile Ser  
1 5 10 15  
Ala Ala Leu Cys Glu Gly Ala Val Leu Pro Arg Ser Ala Lys Glu Leu  
20 25 30  
Arg Cys Gln Cys Ile Lys Thr Tyr Ser Lys Pro Phe His Pro Lys Phe  
35 40 45  
Ile Lys Glu Leu Arg Val Ile Glu Ser Gly Pro His Cys Ala Asn Thr  
50 55 60  
Glu Ile Ile Val Lys Leu Ser Asp Gly Arg Glu Leu Cys Leu Asp Pro  
65 70 75 80  
Lys Glu Asn Trp Val Gln Arg Val Val Glu Lys Phe Leu Lys Arg Ala  
85 90 95  
Glu Asn Ser

<210> 512  
<211> 1666  
<212> DNA

<213> Homo sapiens

<400> 512

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ctccataagg cacaaacttt cagagacagc agagcacaca agcttctagg acaagagcca 60
ggaagaaacc accggaagga accatctcac tgtgtgtaaa catgacttcc aagctggccg 120
tggctctctt ggcagccttc ctgatttctg cagctctgtg tgaagggtgca gttttgccaa 180
ggagtgtctaa agaacttaga tgtcagtgc taaagacata ctccaaacct ttccacccca 240
aatttatcaa agaactgaga gtgattgaga gtggaccaca ctgcgccaac acagaaatta 300
ttgtaaagct ttctgatgga agagagctct gtctggaccc caaggaaaac tgggtgcaga 360
gggttgtgga gaagtttttg aagagggtct agaattcata aaaaaattca ttctctgtgg 420
tatccaagaa tcagtgaaga tgccagtga acttcaagca aatctacttc aacacttcat 480
gtattgtgtg ggtctgttgt aggggtgcca gatgcaatac aagattcctg gttaaatttg 540
aatttcagta aacaatgaat agtttttcat tgtaccatga aatatccaga acatacttat 600
atgtaaagta ttattttatt gaatctacaa aaaacaacaa ataattttta aatataagga 660
ttttcctaga tattgcacgg gagaatatac aaatagcaaa attgaggcca agggccaaga 720
gaatatccga actttaattt caggaattga atgggtttgc tagaatgtga ttttgaagc 780
atcacataaa aatgatggga caataaattt tgccataaag tcaaatttag ctggaaatcc 840
tggatttttt tctgttaaatt ctggcaaccc tagtctgcta gccaggatcc acaagtcctt 900
gttccactgt gccttgggtt ctcccttatt tctaagtggg aaaagtatta gccaccatct 960
tacctcacag tgatgttgtg aggacatgtg gaagcacttt aagttttttc atcataacat 1020
aaattatttt caagtgtaac ttattaacct atttattatt tatgtattta ttttaagcatc 1080
aaatatttgt gcaagaattt ggaaaaatag aagatgaatc attgattgaa tagttataaa 1140
gatgttatag taaattttatt ttatttttaga tattaaatga tgttttatta gataaatttc 1200
aatcagggtt tttagattaa acaaacaaac aattgggtac ccagttaaat tttcatttca 1260
gataaacaac aaataatttt ttagtataag tacattattg tttatctgaa attttaattg 1320
aactaacaat cctagtttga tactcccagt cttgtcattg ccagctgtgt tggtagtgt 1380
gtgttgaaatt acggaataat gagttagaac tattaaaaca gccaaaactc cacagtcaat 1440
attagtaatt tcttgcctgt tgaaacttgt ttattatgta caaatagatt cttataatat 1500
tatttaaatt actgcatttt taaatacaag gctttatatt tttaacttta agatgttttt 1560
atgtgctctc caaatttttt ttactgtttc tgattgtatg gaaatataaa agtaaatatg 1620
aaacatttaa aatataattt gttgtcaaag taaaaaaaa aaaaaa 1666
```

<210> 513

<211> 106

<212> PRT

<213> Homo sapiens

<400> 513

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Met Ala His Ala Thr Leu Ser Ala Ala Pro Ser Asn Pro Arg Leu Leu
1          5          10          15
Arg Val Ala Leu Leu Leu Leu Leu Val Gly Ser Arg Arg Ala Ala
20        25        30
Gly Ala Ser Val Val Thr Glu Leu Arg Cys Gln Cys Leu Gln Thr Leu
35        40        45
Gln Gly Ile His Leu Lys Asn Ile Gln Ser Val Asn Val Arg Ser Pro
50        55        60
Gly Pro His Cys Ala Gln Thr Glu Val Ile Ala Thr Leu Lys Asn Gly
65        70        75        80
Lys Lys Ala Cys Leu Asn Pro Ala Ser Pro Met Val Gln Lys Ile Ile
85        90        95
Glu Lys Ile Leu Asn Lys Gly Ser Thr Asn
100      105
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<210> 514

<211> 1064

<212> DNA



<213> Homo sapiens

<220>

<221> misc\_feature

<222> (27)...(27)

<223> N=A, T, G, or C

<400> 514

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cgctctgct gagcccatg gccacgcca cgctctccgc cgcccccagc aatccccggc 120
tcctgcgggt ggcgctgctg ctctgctcc tggaggcag ccggcgcgca gcaggagcgt 180
ccgtgggtcac tgaactgcgc tgccagtgtc tgcagacact gcagggaatt cacctcaaga 240
acatccaaag tgtgaatgta aggtcccccg gacccactg cgcccaaacc gaagtcatag 300
ccacactcaa gaatgggaag aaagcttgct tcaaccccg atcccccatg gttcagaaaa 360
tcacgaaaaa gatactgaac aaggggagca ccaactgaca ggagagaagt aagaagctta 420
tcagcgtatc attgacactt cctgcagggt ggtccctgcc cttaccagag ctgaaaatga 480
aaaagagAAC agcagctttc tagggacagc tggaaaggga cttaatgtgt ttgactatTT 540
cttacgaggg ttctacttat ttatgtatTT atTTTtgaaa gcttgtatTT taatatTTta 600
catgctgtta tttaaagatg tgagtgtgtt tcatcaaaca tagctcagtc ctgattatTT 660
aattggaata tgatgggttt taaatgtgtc attaaactaa tatttagtgg gagaccataa 720
tgtgtcagcc accttgataa atgacagggt ggggaactgg agggtngggg gattgaaatg 780
caagcaatta gtggatcact gttagggtaa gggaatgtat gtacacatct atTTTttata 840
ctTTTttttt taaaaaagaa tgtcagttgt tatttattca aattatctca cattatgtgt 900
tcaacatTTT tatgctgaag tttcccttag acatTTtatg tcttgcttgt agggcataat 960
gccttgTTta atgtccattc tgcagcgttt ctctttccct tggaaaagag aatttatcat 1020
tactgttaca tttgtacaaa tgacatgata ataaaagttt tatg 1064
```

<210> 515

<211> 99

<212> PRT

<213> Homo sapiens

<400> 515

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Met Lys Val Ser Ala Leu Leu Cys Leu Leu Leu Ile Ala Ala Thr
 1          5          10          15
Phe Ile Pro Gln Gly Leu Ala Gln Pro Asp Ala Ile Asn Ala Pro Val
 20          25          30
Thr Cys Cys Tyr Asn Phe Thr Asn Arg Lys Ile Ser Val Gln Arg Leu
 35          40          45
Ala Ser Tyr Arg Arg Ile Thr Ser Ser Lys Cys Pro Lys Glu Ala Val
 50          55          60
Ile Phe Lys Thr Ile Val Ala Lys Glu Ile Cys Ala Asp Pro Lys Gln
 65          70          75          80
Lys Trp Val Gln Asp Ser Met Asp His Leu Asp Lys Gln Thr Gln Thr
 85          90          95
Pro Lys Thr
```

<210> 516

<211> 757

<212> DNA

<213> Homo sapiens

<400> 516

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ggaaccgaga ggctgagact aaccagaaa catccaattc tcaaactgaa gctcgcactc 60
tcgcctccag catgaaagtc tctgcgcgcc ttctgtgctt gctgctcata gcagccacct 120
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```

tcattcccca agggctcgct cagccagatg caatcaatgc cccagtcacc tgctgttata 180
acttcaccaa taggaagatc tcagtgcaga ggctcgcgag ctatagaaga atcaccagca 240
gcaagtgtcc caaagaagct gtgatcttca agaccattgt ggccaaggag atctgtgctg 300
acccaagca gaagtgggtt caggattcca tggaccacct ggacaagcaa acccaaactc 360
cgaagacttg aacactcact ccacaacca agaactctga gctaacttat tttcccctag 420
ctttccccag acaccctgtt ttattttatt ataattgaatt ttgtttgttg atgtgaaaca 480
ttatgcctta agtaatgtta attcttattt aagttattga tgttttaagt ttatctttca 540
tggtactagt gttttttaga tacagagact tggggaaatt gcttttcctc ttgaaccaca 600
gttctacccc tgggatgttt tgagggtctt tgcaagaatc attaatacaa agaatttttt 660
ttaacattcc aatgcattgc taaaatatta ttgtggaaat gaatattttg taactattac 720
accaaataaa tatatttttg tacaaaaaaa aaaaaaa 757

```

<210> 517  
 <211> 415  
 <212> PRT  
 <213> Homo sapiens

```

<400> 517
Met Glu Leu Arg Lys Tyr Gly Pro Gly Arg Leu Ala Gly Thr Val Ile
1      5      10      15
Gly Gly Ala Ala Gln Ser Lys Ser Gln Thr Lys Ser Asp Ser Ile Thr
20     25     30
Lys Glu Phe Leu Pro Gly Leu Tyr Thr Ala Pro Ser Ser Pro Phe Pro
35     40     45
Pro Ser Gln Val Ser Asp His Gln Val Leu Asn Asp Ala Glu Val Ala
50     55     60
Ala Leu Leu Glu Asn Phe Ser Ser Ser Tyr Asp Tyr Gly Glu Asn Glu
65     70     75     80
Ser Asp Ser Cys Cys Thr Ser Pro Pro Cys Pro Gln Asp Phe Ser Leu
85     90     95
Ile Asn Phe Asp Arg Ala Phe Leu Pro Ala Leu Tyr Ser Leu Leu Phe
100    105    110
Leu Leu Gly Leu Leu Gly Asn Gly Ala Val Ala Ala Val Leu Leu Ser
115    120    125
Arg Arg Thr Ala Leu Ser Ser Thr Asp Thr Phe Leu Leu His Leu Ala
130    135    140
Val Ala Asp Thr Leu Leu Val Leu Thr Leu Pro Leu Trp Ala Val Asp
145    150    155    160
Ala Ala Val Gln Trp Val Phe Gly Ser Gly Leu Cys Lys Val Ala Gly
165    170    175
Ala Leu Phe Asn Ile Asn Phe Tyr Ala Gly Ala Leu Leu Leu Ala Cys
180    185    190
Ile Ser Phe Asp Arg Tyr Leu Asn Ile Val His Ala Thr Gln Leu Tyr
195    200    205
Arg Arg Gly Pro Pro Ala Arg Val Thr Leu Thr Cys Leu Ala Val Trp
210    215    220
Gly Leu Cys Leu Leu Phe Ala Leu Pro Asp Phe Ile Phe Leu Ser Ala
225    230    235    240
His His Asp Glu Arg Leu Asn Ala Thr His Cys Gln Tyr Asn Phe Pro
245    250    255
Gln Val Gly Arg Thr Ala Leu Arg Val Leu Gln Leu Val Ala Gly Phe
260    265    270
Leu Leu Pro Leu Leu Val Met Ala Tyr Cys Tyr Ala His Ile Leu Ala
275    280    285
Val Leu Leu Val Ser Arg Gly Gln Arg Arg Leu Arg Ala Met Arg Leu
290    295    300
Val Val Val Val Val Val Ala Phe Ala Leu Cys Trp Thr Pro Tyr His

```

305		310		315		320
Leu Val Val	Leu Val Asp Ile Leu Met Asp Leu Gly Ala Leu Ala Arg					
	325		330			335
Asn Cys Gly Arg Glu Ser Arg Val Asp Ala Lys Ser Val Thr Ser Gly						
	340		345			350
Leu Gly Tyr Met His Cys Cys Leu Asn Pro Leu Leu Tyr Ala Phe Val						
	355		360			365
Gly Val Lys Phe Arg Glu Arg Met Trp Met Leu Leu Leu Arg Leu Gly						
	370		375			380
Cys Pro Asn Gln Arg Gly Leu Gln Arg Gln Pro Ser Ser Ser Arg Arg						
385		390		395		400
Asp Ser Ser Trp Ser Glu Thr Ser Glu Ala Ser Tyr Ser Gly Leu						
	405		410			415

<210> 518  
 <211> 1703  
 <212> DNA  
 <213> Homo sapiens

<400> 518

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atggagttga ggaagtacgg ccctggaaga ctggcgggga cagttatagg aggagctgct 60
cagagtaaat cacagactaa atcagactca atcacaaaag agttcctgcc aggcctttac 120
acagcccctt cctccccgtt cccgccctca caggtgagtg accaccaagt gctaaatgac 180
gccgaggttg ccgccctcct ggagaacttc agctcttctt atgactatgg agaaaacgag 240
agtgaactcg gctgtacctc ccgccctgc ccacaggact tcagcctgaa cttcgaccgg 300
gccttctctg cagccctcta cagcctcctc tttctgctgg ggctgctggg caacggcgcg 360
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cacctagctg tagcagacac gctgctggtg ctgacactgc cgctctgggc agtggacgct 480
gccgtccagt gggctcttgg ctctggcctc tgcaaaagtgg caggtgccct cttcaacatc 540
aacttctacg caggagccct cctgctggcc tgcacagct ttgaccgcta cctgaacata 600
gttcatgcca ccagctcta ccgccggggg ccccgggccc gcgtgacctt cacctgctg 660
gctgtctggg ggctctgcct gcttttcgcc ctcccagact tcatcttctt gtcggcccac 720
cacgacgagc gcctcaacgc caccactgc caatacaact tcccacaggt gggccgcacg 780
gctctgcggg tgctgcagct ggtggctggc tttctgctgc ccctgctggt catggcctac 840
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atgcggctgg tgggtggtgg cgtggtggcc tttgccctct gctggacccc ctatcacctg 960
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agcagggtag acgtggccaa gtcggtcacc tcaggcctgg gctacatgca ctgctgcctc 1080
aaccgcctgc tctatgcctt ttaggggtc aagttccggg agcggatgtg gatgctgctc 1140
ttgcgcctgg gctgccccaa ccagagaggg ctccagaggc agccatcgtc ttcccgcgg 1200
gattcatcct ggtctgagac ctacagggc tctactcgg gcttgtagg ccggaatccg 1260
ggctccccct tcgcccacag tctgacttcc ccgcattcca ggctcctccc tccctctgcc 1320
ggctctggct ctccccaaata tctcgtctcc cgggactcac tggcagcccc agcaccacca 1380
gggtctcccg gaagccaccc tcccagctct gaggactgca ccattgctgc tcttagctg 1440
ccaagcccca tctgcccgc cgaggtggct gcctggagcc ccaactgcct tctcatttgg 1500
aaactaaaac ttcattcttc ccaagtgcgg ggagtacaag gcatggcgta gagggtgctg 1560
ccccatgaag ccacagccca ggcctccagc tcagcagtga ctgtggccat ggtccccaag 1620
acctctatat ttgctctttt atttttatgt ctaaaatcct gcttaaaaact tttcaataaa 1680
caagatcgtc aggacaaaaa aaa

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1703

<210> 519  
 <211> 60  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Aligent oligonucleotide

<400> 519

gtactttgtg tttaatatat ctgggtgatg gatcacaaca catcaataaa ctgacttacc 60

<210> 520

<211> 60

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic sequence

<400> 520

atttacttgc atatgtaaac cattgctgtg ccattcaatg tttgatgcat aattggacct 60

<210> 521

<211> 60

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic sequence

<400> 521

agatggagga agcatctgag tttgagacca tggtgtttac agggatcatg taaacttgct 60

<210> 522

<211> 60

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic sequence

<400> 522

tggagattta aacttgagg tttctgttca aactgtgagt tctgttcttt gtgagaaatt 60

<210> 523

<211> 60

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic sequence

<400> 523

tgtacctgaa aaatgggaag agtcgggacc acagtttatt accaattctg aggaagtccg 60

<210> 524

<211> 60

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic sequence

<400> 524

atccatttac tcagctggag aggagacatc aagaacatgc cagacacatt tcttttggtg 60

<210> 525

<211> 60

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic sequence

<400> 525

ctggatgttg aattgccacc tgtttgetgt gacatagata tttaaatttc ttagtgcttc 60

<210> 526

<211> 60

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic sequence

<400> 526

ctggaaacct ctggaggtca tctggctgt tctgagaaa taaaagcct gtcatttcaa 60

<210> 527

<211> 60

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic sequence

<400> 527

tggtgcagtc tcctttaagc attctgttga ccctggatgt tgaattgcca cctgtttgct 60

<210> 528

<211> 60

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic sequence

<400> 528

actatttctt cagagtttgt catatactgc ttgtcatctg catgtctact cagcatttga 60

<210> 529  
 <211> 60  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> synthetic sequence

<400> 529  
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 <212> DNA  
 <213> Homo sapiens

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<210> 531  
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<400> 531

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 <213> Homo sapiens

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<210> 533

<211> 515

<212> PRT

<213> Homo sapiens

<400> 533

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Pro Gly Ser Arg Met Thr Pro Gln Gly Pro Ser Met Gly Pro Pro Gly
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Gln Gln Ala Val Gln Asn Arg Asn His Asn Ala Lys Lys Lys Lys Met
115          120          125
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130          135          140
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145          150          155          160
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Lys Gln Lys Arg Lys Leu Arg Ile Phe Ile Ser Asn Thr Phe Asn Pro
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225          230          235          240
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<400> 535

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Pro	His	Arg	Ser	Ala	Ala	Gln	Met	Glu	Val	Ala	Ser	Phe	Leu	Leu	Ser
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Lys	Glu	Asn	Gln	Pro	Glu	Asn	Ser	Gln	Thr	Pro	Thr	Lys	Lys	Glu	His
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Ser	Ser	Gly	Asn	Val	Leu	Ala	Val	Ala	Leu	Asp	Asn	Ser	Val	Tyr	Leu
		195					200					205			
Trp	Ser	Ala	Ser	Ser	Gly	Asp	Ile	Leu	Gln	Leu	Leu	Gln	Met	Glu	Gln
		210				215					220				
Pro	Gly	Glu	Tyr	Ile	Ser	Ser	Val	Ala	Trp	Ile	Lys	Glu	Gly	Asn	Tyr
225					230					235					240
Leu	Ala	Val	Gly	Thr	Ser	Ser	Ala	Glu	Val	Gln	Leu	Trp	Asp	Val	Gln
				245					250					255	
Gln	Gln	Lys	Arg	Leu	Arg	Asn	Met	Thr	Ser	His	Ser	Ala	Arg	Val	Gly
			260					265					270		
Ser	Leu	Ser	Trp	Asn	Ser	Tyr	Ile	Leu	Ser	Ser	Gly	Ser	Arg	Ser	Gly
		275				280						285			
His	Ile	His	His	His	Asp	Val	Arg	Val	Ala	Glu	His	His	Val	Ala	Thr
	290					295					300				
Leu	Ser	Gly	His	Ser	Gln	Glu	Val	Cys	Gly	Leu	Arg	Trp	Ala	Pro	Asp
305					310					315					320
Gly	Arg	His	Leu	Ala	Ser	Gly	Gly	Asn	Asp	Asn	Leu	Val	Asn	Val	Trp

